RESEARCH AT GRASS ROOTS

For the social sciences and human service professions

FOURTH EDITION

AS de Vos | H Strydom | CB Fouché | CSL Delport

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PUBLISHERS

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PREFACE

The purpose of *Research at grass roots: for the social sciences and human service professions* is to meet a need among social scientists and human service professionals for an indigenous methodology text that is more appropriate for the local situation than most sources that we have largely been dependent upon thus far.

The book aims at meeting the needs of both the novice and the experienced researcher. Novice researchers are usually introduced to the theory of research in an undergraduate module and then expected to conduct a study of limited scope regarding both literature and empirical investigation, normally in their final year of study. This book will certainly assist them in this regard, and issues that are covered on a more advanced level will address the needs of postgraduate researchers and academics.

Section A introduces the general argument of the book. Chapters 1 to 3 form a whole, and lay the theoretical foundation of the book. These chapters argue that the delicate yet dynamic relationships between five basic constructs are essential to an understanding of research in the social sciences and human service professions. These constructs are the sciences, the professions, scientific theory, professional research and professional practice. The main idea of these chapters is that researchers should be aware of the thought processes and therefore the intellectual challenges involved in forging a genuine scientific base for human service professions such as teaching, nursing and social work. From these thought processes emerges a tentative theory of scientific foundation building in the human service professions. Chapter 4 describes the research process as we view it: steps relevant to both the quantitative and the qualitative research processes, and the steps unique to each.

Section B of the book focuses on the steps common to both of these processes, comprising the identification and selection of a researchable topic, formal formulation and writing the research proposal. For this edition, the chapter on ethical aspects of research has been moved to section B due to the fact that ethical issues are common to both the quantitative and the qualitative processes, and need to be taken into consideration from the start of a project.

Section C deals with the steps unique to the quantitative process, namely steps 6 to 13. These comprise an in-depth review of literature; quantitative research designs; quantitative data-collection methods; sampling and pilot study in the quantitative paradigm; quantitative data analysis and interpretation; and the writing of the quantitative research report. In this edition, the quantitative data-collection methods have been split into two chapters, the first focusing on questionnaires, checklists, structured observation and structured interview schedules, and the second on indexes and scales. We consider this expansion as valuable in order to be able to distinguish more clearly among the various quantitative data-collection methods.

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Section D also presents steps 6 to 13, focusing in this context on aspects of the qualitative process. These steps comprise theory and literature in the qualitative paradigm; qualitative research designs; methods of information collection; sampling and pilot study in qualitative research; qualitative data analysis and interpretation; and the qualitative research report.

In section E, the focus is on the combination of quantitative and qualitative approaches to research, namely mixed methods research, evaluation research, intervention research and participatory action research. The first chapter in this section – on mixed methods research – is a new addition. The final chapter of the book, namely building a scientific base for the helping professions, returns to the first three chapters of the book in order to conclude our thinking on the research process.

In order for readers to achieve the aims outlined above, we suggest that lecturers and students use the book as follows:

- On undergraduate level, students should study chapters 1 to 8 and then submit their research proposals to the lecturers supervising their research. At this stage one need not be too concerned about the first three chapters, as they represent thinking better suited to more advanced students and researchers. Some orientation to scientific thinking in the social sciences and the scientific foundations of the human service professions is, however, important.
- With some time being allowed to elapse from the initial orientation to research to the writing of the research proposal, students' thinking will hopefully continue to mature.
- During the next phase of training in research, the proposals should first be discussed in depth. For the remainder of the graduate course, we suggest that sections C and D be studied in detail, as well as the first chapter from section E (on mixed methods research), in order for students to be able to decide on whether to follow quantitative, qualitative or mixed methods research in their particular study.
- Section E is recommended for use mainly by postgraduate students. We strongly feel that evaluation research, intervention research and participatory action research should not be attempted at undergraduate level.

Finally, we appeal to users of this edition of *Research at grass roots: for the social sciences and human service professions* to give us feedback regarding the usefulness of the book. We are especially interested in any comments on deficiencies or omissions that could be rectified in future editions. Such feedback may be submitted by e-mail to JRead@vanschaiknet.com.

The authors
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AUTHOR INFORMATION

Prof. Annemie de Vos retired in 1993 from the Department of Social Work at the former Rand Afrikaans University, Johannesburg, recently renamed the University of Johannesburg. During the last ten years of her career she taught social work research and was study leader to some 40 postgraduate students. She has published more than 30 articles in national professional journals and was founder-editor of the South African professional journal, *The Social Work Practitioner Researcher.*

Prof. Herman Strydom has been teaching social work research for more than 30 years, initially at the University of Pretoria, and since 1987 at the North-West University (Potchefstroom Campus). He is subject head of Social Work and Professor in the School for Psycho-Social Behavioural Sciences. He has supervised numerous postgraduate students, delivered papers at many national and international conferences and workshops, and published extensively on research issues and other fields such as the aged, social group work and HIV and Aids. Prof. Strydom is a NRF-rated researcher and a member of the editorial boards of a number of accredited journals. He is also involved in a number of the national and international research projects such as the REds project on Resilient Educators, the PURE study on Prospective Urban and Rural Epidemiology, the ICURA project on Pathways to Resilience and the Homelessness project.

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Prof. Rina Delport is an associate professor in the Department of Social Work and Criminology at the University of Pretoria. She has been teaching social work research since 1997, coordinates research in the Department of Social Work and Criminology, and was a member of the Proposal and Ethics Committee of the Faculty of Humanities at the University of Pretoria. She is a co-author of a textbook on criminology, as well as an international book on qualitative research ethics. She has

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Prof. Minrie Greeff has been Professor in research in the Africa Unit for Transdisciplinary Health Research of the Faculty of Health Science at the North-West University, Potchefstroom campus since 2008. She was the head of the Department of Nursing for five years (1994–1998) and then the director of the School of Nursing Science for a further six years (1999–2004) in the newly formed Faculty of Health Science. She is an acknowledged researcher and has published extensively in national and international scientific journals, and presented her research findings at many national and international conferences. In the past few years she has focused her research effort on HIV- and Aids-related aspects. She was a member of the Nursing Standards Generating Body for eight years and a counsellor of the South African Nursing Council for five years. She has been the elected director of the research committee of the "Tau Lambda-at-Large Chapter" of the Sigma Theta Tau International Honor Society for Nurses since 2006. In 2008 she became one of the National Research Foundation's rated researchers.

Prof. Leila Patel is Professor of Social Development Studies and Chairperson in the Department of Social Work at the University of Johannesburg. She is also the Director of the Centre for Social Development in Africa. Previous positions include Deputy Vice Chancellor and Vice Principal of the University of the Witwatersrand, and Director General of Social Welfare and Population Development. She is the author of the White Paper for Social Welfare, published in February 1996.

Prof. Wim Roestenburg is an associate professor at the University of Johannesburg where he has worked since 1994. He teaches mainly research methodology, data analysis and practice-related courses at postgraduate level. As an established researcher in both his academic and private practice, he has completed many different research projects for a variety of organisations, including government and the private sector. Most of these studies involved the use of mixed methods, and his experience is therefore focused on both methods of social research. His supervision of some 30 postgraduate students, mostly within the social sciences, supplemented by an extensive publication record, has provided him with a thorough understanding of the needs of grass roots researchers in the South African context.

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Prof. Salomé Schulze has been a lecturer at Unisa for the past 25 years, and has been extensively involved in the teaching of research methods for most of this time. She has read papers at numerous national and international conferences, and has published extensively in peer-reviewed, accredited journals. Her main research focus areas are factors involving research output in higher education, the mentoring of research novices, and postgraduate supervision. More than 30 Master's and doctoral students have completed their studies under her supervision.

Prof. Willem Schurink is recognised in the South African social sciences community as an expert qualitative methodologist. He is currently a part-time professor in the Department of Industrial Psychology and People Management at the University of Johannesburg. He held various positions at the Human Sciences Research Council (HSRC), and received a number of merits and awards during his 30-year career. He was a chief research specialist in the Group: Democracy and Governance when he took early retirement at the end of April 2000 after an almost-fatal operation. As private consultant and advisor to a range of university departments and business schools nationally, he presents courses in qualitative research methodology, and continues to supervise Master's and doctoral studies. These include auto-ethnographical and arts-based postmodernist work. He has, to date, supervised 33 doctoral students to completion.

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CONTENTS

Section A

Research in the human service professions

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Section B

Steps common to both the quantitative and the qualitative research process

Section C

Steps unique to the quantitative process

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Section D

Steps unique to the qualitative process

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SECTION

A

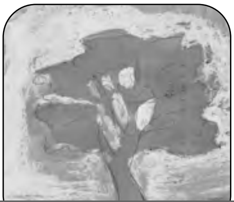
Research in the human service professions

ORIENTATION AND PREPARATION	
Section A Research in the human service professions	
Chapter	**Research process**
1. The sciences and the professions	A foundation for a description of chapters 1–3, the research process
2. Scientific theory and professional research	
3. Professional research and professional practice	
4. Introduction to the research process	The two approaches: qualitative and quantitative paradigms

The first three chapters of this section form an organic whole. Their purpose is to lay the foundation not only of this section, but of the book in its entirety.

Five basic constructs essential to an understanding of research in the social sciences and in the human service professions are discussed here. They are the sciences, the professions, scientific theory, professional research and professional practice. Some of the relationships between these constructs are drawn tentatively – for instance between the sciences and the professions, between scientific theory and professional research, and between professional research and professional practice. The main thrust of these three chapters is an attempt to identify and describe the thought processes and, therefore, the intellectual challenges involved in forging a genuine scientific base for the human service professions such as teaching, nursing and social work. In the process, a tentative theory of scientific foundation building for the human service professions is presented.

The fourth chapter deals with the introduction to the research process.



1

AS DE VOS, H STRYDOM, S SCHULZE & L PATEL

The sciences and the professions

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with the nature of the sciences and the professions
- gain an understanding of the relationship between the sciences and the professions.

1. INTRODUCTION

As mentioned in the introduction to this section, the first three chapters collectively form a foundation for, and an introduction to, our description of the research process as we view it. Basic concepts fundamental to an understanding of the research process, such as the sciences, the professions, scientific theory, professional research and professional practice, and some of the relationships between these concepts are explored. In this chapter the sciences, the professions and the relationship between them are examined.

2. SCIENCE

2.1 Definition

The Oxford dictionary of English (2005) defines science as "the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment" while *A dictionary of public health* (2007) sees science as

> a way of examining, explaining, reflecting on, and predicting natural phenomena that employs systematic observation, experiment, and logical inference to formulate and test hypotheses with the aims of establishing, enlarging, and confirming knowledge and the laws of nature. Science advances through con-

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> jecture or intuition, hypothesis, refutation of deductions from previous and imperfect hypotheses, and ultimately verification of hypothesis by induction. Occasionally, science undergoes a paradigm shift as long-established principles and laws are overturned by new discoveries.

Neuman (2003: 7) adds a dimension to these definitions of science by stating that science refers both to a system for producing knowledge and to the knowledge produced from that system. The system has evolved over many years and is slowly but constantly changing. Assumptions about the nature of the world and knowledge are combined to form an orientation toward knowledge and sets of procedures, techniques and instruments for gaining knowledge. It is visible in a social institution called the scientific community. Mouton (1996a: 13) uses the terminology *product* and *process* for the same idea. He writes that as a product or outcome of scientific research, scientific knowledge can be defined as the body of propositions (factual statements, hypotheses, models, theories, laws) which, at a specific time, is accepted by the scientific community (for instance the community of sociologists or psychologists) as being valid and reasonably correct.

2.2 Classification of the sciences

The primary, broad classification of the sciences consists of the division of the sciences into the natural sciences (physics, chemistry, biology and astronomy), formal sciences (mathematics and logic), social sciences (sociology, psychology, anthropology and political studies) and humanities (history, philosophy and linguistics) (Mouton 1996a: 9).

The humanities are characterised by the fact that they study human (including cultural) activity as mainly manifested in texts, works of art and other physical objects which are the results of such activity in the remote, or not so very remote, past or present. Disciplines such as archaeology, palaeontology, theology and the arts are therefore also included in this group. The humanities thus encompass those disciplines that study human activity indirectly, that is via its physical manifestations or deposits such as skeletal remains, traces of engineering projects excavated, documents, texts, paintings, sculpture, musical scores and other objects (cf. Mouton 1996b).

The social sciences are characterised by the fact that they study human and cultural activity directly, often in the present rather than in the past, although a historical dimension is not excluded and is often very important. Some scholars (Rosnow & Rosenthal 1993) draw an even finer distinction within the social sciences by separating the behavioural sciences such as sociology, psychology and education from the broader group of social sciences (cf. Mouton 1996b).

2.3 The scientific community

Grinnell (2001: 548) defines the scientific community as a group sharing the same general norms for both research activity and acceptance of scientific findings and explanations. Every scientific community may be thought of as a small society with its own avenues of communication, socialisation and social control. It is also a pro-

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fessional community due to interacting people who share ethical principles, beliefs and values, techniques, training and career paths (Neuman 2003: 9). Communication within a scientific community is in the form of professional association newsletters, professionally refereed journal articles, conferences, lectures, and other peer-review mechanisms. Regarding the size of the scientific community, Neuman's (2003: 9) "educated guess" is that about 15 per cent of the labour force in advanced industrialised countries are members of the scientific community. The norms of the scientific community are identified by Neuman (2000: 9) as universalism, organised scepticism, disinterestedness, communalism and honesty.

2.4 The scientific method and attitude

According to Neuman (2003: 10), the scientific method is not one single thing. It refers to the ideas, rules, techniques, and approaches that the scientific community uses. The method arises from a loose consensus within the community of scientists. It is, therefore, better to focus on the scientific attitude, or a way of looking at the world. It is an attitude that values craftsmanship, with pride in creativity, high-quality standards and hard work.

Grinnell and Unrau (2005: 15) see the scientific method as the many ideas, rules, techniques, principles, procedures and approaches that the research community uses for the solving of problems and to gain knowledge. While the scientific method is an ideal construct, the scientific attitude is the way people have of looking at the world. Doing science includes many methods; what makes them scientific is their acceptance by the scientific collective. According to Kerlinger and Lee (2000: 7), the scientific approach has the characteristic of self-correction because there are built-in checks all along the way to scientific knowledge. These checks control and verify scientific activities in order to attain dependable knowledge. Denscombe (2008: 7) adds that the rigour of a scientific approach is something that most researchers continue to value as a research skill.

2.5 Seven main approaches to social sciences

The social sciences can be viewed as those sciences that deal with a particular phase or aspect of human society or, as Neuman (2000: 6) puts it, that involve the study of people – their beliefs, behaviour, interaction, institutions. They are sometimes called soft sciences because their subject matter, human social life, is fluid, formidable to observe, and hard to measure precisely with laboratory instruments. These difficulties motivated social scientists to look to different avenues of approach to human phenomena as scientific subject matter. Gradually a few approaches emerged, of which the positivist, the postpositivist, constructivism, interpretive and critical are best known. The feminist and postmodern approaches have also staked their claims in recent years.

Patton (2002: 129) reminds us that one of the strengths of qualitative methods is the inductive, naturalistic inquiry strategy of approaching a setting without predetermined hypotheses. However, the problem is how to approach the field with an open mind. One approach is orientational qualitative inquiry, which avoids any pretence of open-mindedness in the search for grounded or emergent theory. Orienta-

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SECTION A

tional qualitative inquiry begins with an explicit theoretical or ideological perspective that determines what conceptual framework will direct fieldwork and the interpretation of findings.

POSITIVISM

Positivism is an approach to social research that seeks to apply the natural science model of research to investigations of social phenomena and explanations of the social world (Denscombe 2008: 14). Many people assume that the positivist approach *is* science. According to Bryman (2000: 13–16), the problem with this stance is simply that the term *positivist* was used glibly and indiscriminately by many writers and in fact became a term of abuse. What, then, is positivism supposed to comprise? Glicken (2003: 20) answers as follows: Positivism firstly entails a belief that the methods and procedures of the natural sciences are appropriate to the social sciences. This view involves a conviction that the objects of the social sciences, namely people, are not an obstacle to the implementation of the scientific method.

The positivists also believe that an objective reality exists outside of personal experience that has demonstrable and immutable laws and mechanisms that can reveal cause-and-effect relationships (Babbie & Mouton 2001: 23; Neuman 2003: 75). Positivism maintains that it is possible and essential for the researcher to adopt a distant, detached, neutral and non-interactive position (Morris 2006: 3). For the same reason positivists prefer analysis or outside observer interpretations of data (Druckman 2005: 5). The abstract ideas of the social relationship should be linked to precise measurements of the social world. These processes lead to the empirical test and confirmation of the laws of social life as outlined in theory (Neuman 2003: 75).

Secondly, positivism entails a belief that only those phenomena that are observable, in the sense of being amenable to the senses, can validly be warranted as knowledge. This means that there is no place for phenomena that cannot be observed either directly through experience and observation or indirectly with the aid of instruments. Thirdly, many accounts of positivism suggest that scientific knowledge is arrived at through the accumulation of verified facts. These facts feed into the theoretical edifice pertaining to a particular domain of knowledge. Thus theory expresses and reflects the accumulated findings of empirical research. Such findings are often referred to as laws pertaining to a particular field, that is empirically established regularities (Bryman 2000: 15).

In the fourth place, scientific theories are seen by positivists as providing a kind of backcloth to empirical research in the sense that hypotheses derived from them are then submitted to empirical test. This implies that science is deductive, in that it seeks to extract specific propositions from general accounts of reality. The logic involved might entail seeking to construct a scientific theory to explain the laws pertaining to a particular field; a hypothesis (or possibly more than one) is derived in order to enable the scientist to test the theory; if the hypothesis is rejected when submitted to rigorous empirical examination, the theory must be revised.

Finally, positivism is also often taken to entail a particular stance in relation to values. The scientist needs to be purged of values which may impair his or her objectivity and so undermine the validity of knowledge. The second aspect of posi-

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tivism's position on values is to draw a sharp distinction between scientific issues and statements on the one hand and normative ones on the other. While positivists recognise that they can investigate the implications of a particular normative position, they cannot verify or disprove the position itself.

POSTPOSITIVISM

Positivism, as was indicated above, contends that there *is* a reality out there to be studied, captured and understood, whereas postpositivists argue that reality can never be fully apprehended, only approximated. Postpositivism relies on multiple methods as a way of capturing as much of reality as possible. Emphasis is also placed on the discovery and verification of theories. Traditional evaluation criteria, such as internal and external validity, are stressed, as is the use of qualitative procedures that lend themselves to structured (sometimes statistical) analysis (Denzin & Lincoln 1994: 5).

The postpositivist researcher focuses on the understanding of the study as it evolves during the investigation and thus begins with an area of study and what is relevant to that area for a fuller understanding thereof. A precise question and hypothesis are thus not developed before starting the study (Morris 2006: 77). Postpositivists often believe that a variety of variables cannot always be controlled, and that positivist research is often difficult and impractical for many forms of social research (Glicken 2003: 27). However, research is important and every effort should be made to execute research projects. It is often difficult to establish a cause-and-effect relationship in a given project as well as to apply it to other settings. It can rather be said that there are tendencies towards a specific notion which can by repetition bring valuable data to the fore.

Because postpositivism is a much freer paradigm, it allows for the development of alternative research strategies that might be able to find information in the most unlikely and creative ways (Glicken 2003: 28). Researchers in this paradigm normally believe in multiple perspectives from participants rather than a single reality (Creswell 2007: 20). Postpositivism provides the researcher with the freedom to use more subjective measures of gathering information. The sample size might be small, while measuring instruments might be created by the researcher him- or herself. The degree of honesty of the researcher may be a huge problem in this kind of research. Subjectivity in a study can make the data useless. All researchers should be able to explain and defend their research methodologies and make provision for replication of the study. If it is done correctly, postpositivist research offers social scientists the ability to do research on a small scale using very creative methodologies (Glicken 2003: 29).

CONSTRUCTIVISM

Participants in research projects are often seen as passive role players in the researcher's total plan to gather data mostly for his or her own purposes. As far as constructivism is concerned, the participants become active and involved in all the phases of the process and indeed become partners in the total endeavour. Participants seek understanding of the world in which they live and work (Creswell 2007: 20). In this manner participants can influence the course of the total process and have a say in everything that takes place.

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Glicken (2003: 30) suggests the involvement of participants in choosing and formulating the problem to be studied, and in helping to formulate the measuring instrument and the strategy to be followed in the project. Constructivism can be regarded as a radical departure from positivism in the sense that the philosophy has changed from tight control over the total process to full empowerment of the participants. This approach is thus interested in an open and democratic relationship between the participant and the researcher (Glicken 2003: 31). It is believed that the outcome of the project is enhanced and the results more accurate when participants are involved throughout. There can be problems attached to this approach such as a high drop-out figure, or one or two participants trying to dominate the process. This can be very time consuming.

INTERPRETIVE APPROACH

This paradigm is also called the phenomenological approach, that is an approach that aims to understand people (Babbie & Mouton 2001: 28). Interpretive social science can be traced to the German sociologist Max Weber (1854–1920) and the German philosopher Wilhelm Dilthey (1833–1911). Dilthey argues that there are two fundamentally different types of science: the natural sciences and the human sciences. The former type is based on *Erklärung,* or abstract explanation. The latter is rooted in an empathetic understanding, or *Verstehen,* of the everyday lived experience of people in specific historical settings (Neuman 2003: 75). This approach maintains that all human beings are engaged in the process of making sense of their worlds and continuously interpret, create, give meaning, define, justify and rationalise daily actions (Babbie & Mouton 2001: 28).

Interpretive social science is related to hermeneutics, a theory of meaning that originated in the 19th century. The term comes from a god in Greek mythology, Hermes, who had the task of communicating the desires of the gods to mortals. Hermeneutics, Neuman (2000: 70–71) states, is largely found in the humanities (philosophy, art history, religious studies, linguistics and literary criticism). It emphasises a detailed reading or examination of a text, which could refer to a conversation, written words or pictures. A researcher conducts a reading to discover meaning embedded within text. Each reader brings his or her subjective experience to a text. When studying the text, the researcher/reader tries to absorb or get inside the viewpoint it presents as a whole, and then develop a deep understanding of how its parts relate to the whole. In other words, true meaning is rarely simple or obvious on the surface; one reaches it only through a detailed study of the text, contemplating its many messages and seeking the connections among its parts (Neuman 2003: 76).

In this paradigm the researcher often uses participant observation and field research which are techniques where many hours and days are spent in direct contact with participants. Transcripts, conversations and video tapes may be studied in detail in order to gain a sense of subtle non-verbal communication or to understand the interaction in its real context (Neuman 2003: 76).

CRITICAL APPROACH

The critical approach emphasises that reason is the highest potential of human beings, and that by using reasoning it is possible to criticise and challenge the

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nature of existing societies (Blaikie 2007: 135). Critical theory admits to bias being present in every action of a human being and hopes the findings will support that bias (Glicken 2003: 23). The researcher should continue to be as objective as possible, and must scrupulously conduct the project so that personal bias does not affect the findings. Versions of this approach are called dialectical materialism, class analysis and structuralism. Critical theory agrees with many of the criticisms that the interpretive approach levels at positivism, but it adds some of its own and disagrees with interpretive social science on some points.

Patton (2002: 130–131) adds that one of the most influential orientational frameworks is "critical theory", which focuses on how injustice and subjugation shape people's experiences and understanding of the world. What gives critical theory its name – what makes it *critical* – is that it seeks not just to study and understand society but rather to critique and change society. Influenced by Marxism, informed by the presumption of the centrality of class conflict in understanding community and societal structures, and updated in the radical struggles of the 1960s, critical theory provides a framework – of both philosophy and method – for approaching research and evaluation as fundamentally and explicitly political, and as change-oriented forms of engagement.

For Babbie and Mouton (2001: 36), the critical approach emphasises becoming part and parcel of the everyday life worlds of the people to be studied, whoever they may be, with the aim of becoming educative and ultimately transformative. Participants should feel free and be encouraged to give their own view of their own situation and the world they live in. The focus of the critical paradigm is thus on transforming human beings and their environment by being personally involved in actions that would change their circumstances. The critical social scientist then talks about the action, production, emancipation and transformation of human beings (Babbie & Mouton 2001: 36).

FEMINISM

Researchers – almost all of them women – who hold a feminist self-identity and consciously use a feminist perspective, conduct feminist research. Feminist methodology attempts to give a voice to women and to correct the male-oriented perspective that has predominated in the development of social science. Feminism is concerned with the under-representation of women and women's experiences within the social sciences, both as the subjects of research and the producers of theory (Babbie & Mouton 2001: 37). It is inspired by pioneering texts that argue that women learn and express themselves differently from men (Neuman 2000: 82). The starting point of feminism is on the lived experience of women specifically and how they have been discriminated against, and to analyse social structures in society that influence women negatively and give men an unfair advantage over them (Babbie & Mouton 2001: 37–38).

Feminist researchers suggest that relationships, the connections between people and subjects' experience of the context of the research are the keys to understanding social phenomena (Morris 2006: 134). In a sense there is a strong link between feminism and the critical approach. Utilising some authoritative sources, Patton (2002: 129) points out that a feminist perspective presumes the importance of gender in human relationships and societal processes, and orients the study in

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SECTION A

that direction. Principles of feminist inquiry may include

- a sense of connectedness and equality between researcher and researched
- explicitly acknowledging and valuing "women's ways of knowing", including the integration of reason, emotion, intuition, experience and analytic thought
- participatory processes that support consciousness raising and researcher reflexivity
- going beyond knowledge generation, beyond "knowledge for its own sake", to engage in using knowledge for change, especially "knowledge about women that will contribute to women's liberation and emancipation".

POSTMODERNISM

Postmodern research is part of the larger postmodern movement or evolving understanding of the contemporary world that includes art, literature and cultural criticism. Postmodernism is a rejection of modernism. Modernism refers to basic assumptions, beliefs and values that arose in the Enlightenment era. Modernism relies on logical reasoning; it is optimistic about the future and believes in progress; it has confidence in technology and science, and it embraces humanist values. Human emancipation and social progress are promised in this approach, which advocates value freedom and objectivity in social research (Babbie & Mouton 2001: 40).

Patton (2002: 100–101) further explicates postmodernism as follows: belief in science as generating truth was one of the cornerstones of modernism inherited from the Enlightenment. Postmodernism attacked this faith in science by questioning its capacity to generate truth, in part because, like all human communications, it is dependent on language, which is socially constructed and, as such, distorts reality. Postmodernism asserts that no language, not even that of science, can provide a direct window through which one can view reality. Language inevitably and inherently is built on the assumptions and worldview of the social group that has constructed it and the culture of which it is a part. Thus language does not and cannot fully capture or represent reality.

It follows from this that the continuity of knowledge over time and across cultures is called into question. Modernism's faith in science included the assumption that knowledge increases over time and that such accumulation constitutes continuous progress. Hesse-Biber and Leavy (2006: 244) mention that postmodern trends in qualitative research have opened newly created spaces to make the voice of participants heard. In postmodern research there is also a focus on the explanation and interpretation of behaviour patterns and narratives of participants in the research project.

2.6 Alternatives to scientific research

In addition to being a collection of methods, social research is a process for producing knowledge and is more organised and structured than the alternatives (Neuman 2003: 2). Knowledge from the alternatives is often correct, but knowledge based on research is more likely to be true and has less chance of mistakes. The following alternatives can be described:

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TRADITION

Tradition can be seen as a form of authority from the past, as things have always been and are based on custom, habit and repetition. It is founded on a belief in the sanctity of ancient wisdom and the ways of our forefathers, and it is widespread in all societies (Monette, Sullivan & DeJong 2005: 19). Neuman (2003: 3) says that some traditional social knowledge begins as simple prejudice. Even if traditional knowledge was once true, it can become distorted as it is passed on, and soon is no longer true. Sometimes people cling to traditional knowledge without real understanding and assume that because something may have worked in the past, it will always be so. Tradition can, however, be an important source of knowledge especially as far as moral judgements and values are concerned.

AUTHORITY

When something is accepted as true just because someone in an authoritative position maintains that it is so or because it has been written in an authoritative publication, authority as a basis of knowledge is being used (Neuman 2003: 3). Relying on the wisdom of authorities is a quick and simple way of learning something. People in authoritative positions mostly spend time and effort to become authoritative and one can benefit from their experience without having to go back to the beginning. The idea of science is, after all, to build on top of what has already been done and established.

We do well to trust the judgement of the person who has special training, expertise and credentials on a given topic (Babbie 2007: 5–6). One can, however, overestimate the expertise of others and they may speak on fields they know little about and can even be plainly wrong. Experts should always realise that they have expertise in a particular field and should not cross boundaries into other fields of which they know little or nothing. Too much reliance on authorities can be dangerous.

PERSONAL EXPERIENCE

If something happens to a person, that is he or she personally sees or experiences something, it is accepted as true. Personal experience has a strong impact and is a powerful source of knowledge. It can, however, also lead the researcher towards sidetracking. Personal experience can mislead people through propaganda and stereotyping, and can lead to over-generalisation. This typically happens when a person has some evidence that can be believed and then assumes that it applies to all or many other situations (Neuman 2003: 5).

Human perceptions are mostly unreliable, especially due to cultural background and the mood of the observer, the conditions of observation and the nature of what is being observed. Even under the best circumstances, misperception is likely and thus knowledge based on experience is often inaccurate (Monette et al. 2005: 20). Limited generalisation may be appropriate, but the problem comes in when people generalise well beyond limited evidence.

Selective observation may be a problem in personal experience when one takes special notice of some people or events and then generalises from these observations, especially when they fit the person's preconceived ideas. Evidence is often sought that confirms what we already know or believe, while contradictory evidence

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is ignored. Neuman (2003: 6) discusses premature closure as another issue in personal experience which happens when we feel we have all the answers and need no additional information. The halo effect can also play a role in personal experience when we generalise from what we believe to be highly acceptable in a certain situation – in other words, we give certain things or people a halo or a strong reputation.

COMMON SENSE

Everybody knows much about their world from their ordinary reasoning or common sense. A person regarded as a person with common sense then relies on what everyone knows and believes makes sense in life. Common sense can imply logical reasoning and widely shared beliefs based on tradition and authority (Rubin & Babbie 2005: 22). People with common sense are presumed to be able to make sound decisions even though they lack any specialised training and knowledge (Monette et al. 2005: 21).

Presumably, common sense often explains everything, even when those explanations contradict one another and do not normally involve a rigorous and systematic attempt to distinguish reality from fiction. Common sense is valuable in daily living, but it can allow logical fallacies to slip into the researcher's thinking. Common sense can be useful, rational and sometimes correct, but it can also contain errors, misinformation, contradiction and prejudice (Neuman 2003: 4). Common sense is mostly insufficient and a highly risky alternative to scientific knowledge.

MEDIA MYTHS

Television, movies, and newspaper and magazine articles are important sources of information about social life, but are primarily meant to entertain or inform and not necessarily to present reality accurately. The media are often a platform on which competing interests try to win public support. They can create the impression that nobody really knows what the truth about a matter is or that scientists are undecided about a certain issue. Although we can learn a lot from the popular media, we can also be misled by them (Rubin & Babbie 2005: 23).

Even when journalists strive for accuracy in their endeavours, the nature of their business can impede their efforts. According to Monette et al. (2005: 22), there are key differences between journalism and science, such as that the observations of scientists are much more systematic in nature in order to avoid inaccuracies and that journalists are not concerned with theory building and theory verification in order to develop an abstract explanation of people's behaviour.

2.7 The roles of the researcher

THE RESEARCH CONSUMER

Consuming research findings, meaning to read with understanding in order to utilise the findings, is a very important research role of the social worker (Grinnell & Unrau 2005: 20). The scientific approach is essentially the building of a knowledge base for social work. In order to use this knowledge in an informed manner, social workers need to understand research methodology (Marlow 2005: 20). The social worker should be able to analyse a research report in order to utilise it to the

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fullest for his or her specific practice situation. The practitioner informed about research can turn to this research for practice guidelines and can thus practise on empirically based evidence to become a research consumer in the full sense of the word. Simultaneously, the practitioner can ensure that the interventions he or she selects are the best possible ones to serve people better (Grinnell & Unrau 2005: 20).

In order to take full advantage of research being done on a topic that interests the prospective researcher, he or she must be able to read and interpret scientific research reports. That is why it is so important that all social workers be properly trained in research methodology. If you understand research methodology you will also be in a position to evaluate the research and come to your own conclusions (Alston & Bowles 2003: 2–3). In this manner you will not only be able to be a better consumer of research, but also a better thinker who can judge and interpret information (Mitchell & Jolley 2001: 34–35). In this manner, abstract data can also become applicable to the daily practice of the social worker.

THE RESEARCH PRODUCER

Grinnell and Unrau (2005: 20) call this role the creator and disseminator of knowledge, meaning that social workers should conduct their own research and thus create knowledge. Practitioners as researchers should also be able to see their own field as a research project or a couple of smaller research projects so that questions can be answered as they arise. Social workers should be able to demonstrate from time to time the effectiveness of interventions or the improvement of existing services that they apply in their daily practice (Marlow 2005: 20). These types of inquiry demand knowledge and implementation of research methods. The producers of research can in this manner begin to build new knowledge for practice. If this task seems to be overwhelming, practitioners should realise that even small tasks from their daily routine, such as report writing, are included in the larger activity of research.

Few practitioners are committed to doing research and using research data and in this manner most of the best work accomplished by social work professionals is never recorded or published and consequently never used by anyone other than the creator of the research. We know that a project that is only in the mind of the researcher is no research until it has been published in one or other form.

Even small research efforts to understand the world people live in can have a profound effect on the way society functions. All social workers should be committed to continue the research effort in pursuit of making the world a better place in the widest sense of the word (Glicken 2003: 258). Once social workers have completed a first small project, they see that it can be done and that the worst part of research is in actual fact planning a project and getting started. Some social workers might enjoy the challenges attached to solving social problems, while others might enjoy the excitement of obtaining answers to questions about human behaviour (Mitchell & Jolley 2001: 38).

THE CONTRIBUTING PARTNER

In this instance we turn to larger projects where a number of researchers are involved. As a partner in such a project the researcher becomes a contributing part-

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ner as part of the greater team effort, including agency staff, administrative staff and the researchers. The role of every team member should be spelled out beforehand in order to avoid a misunderstanding between members of the team. One team member may be a very accurate observer when it comes to observing client behaviour, another may have ideas on selecting the problem, doing proper field work, reporting on field notes, liaising with the community for proper procedures, or studying and selecting the most appropriate measuring instrument. To be part of such a large team effort in doing research can contribute on a macro level to increasing the knowledge base of social work (Grinnell & Unrau 2005: 20–21).

THE INTEGRATOR OF THE THREE ROLES

The three roles are not actually independent of one another and they must be integrated if research is to accomplish its goals of increasing the profession's knowledge base and improving the effectiveness of interventions (Grinnell & Unrau 2005: 21). The issue is not about whether social workers should consume research findings, produce and disseminate research results or become contributing partners in larger research projects. Rather it is whether social workers can engage the full spectrum of available knowledge and skills in the continual improvement of their practices.

Only by expanding our research and practice base can social work stand up to its reputation and place in the scientific community of human service professionals. As Grinnell (2001: 19) concludes: "It is a way of carving out a niche of respectability, of challenging the insidious stereotype that, although social workers have their hearts in the right place, they are uninformed and ineffective." The absence of a research base in social work and the lack of vigorous research efforts to expand this base will undoubtedly erode our credibility as scientists in the long run.

3. PROFESSIONS

3.1 Definition

Webster's comprehensive dictionary (1998: 1006) defines a profession as "an occupation that properly involves a liberal education or its equivalent, and mental rather than manual labour; esp. one of the three learned professions, law, medicine, or theology".

3.2 Which occupations are professions?

Authors differ with respect to the professions they include in the category of genuine professions. Goode (in Etzioni 1969) identifies what he calls "the four great person professions as law, medicine, the ministry, and university teaching". Carr-Saunders (1955) differentiates four major types of profession in modern society:

- The established professions, that is law, medicine and the church
- The new professions, that is those which are based on their own fundamental studies such as engineering, chemistry, accounting, and the natural and social sciences
- The semi-professions, that is those that replace theoretical study by the acquisition of technical skill, e.g. nursing, pharmacy, optometry and social work

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- The would-be professions, that is those requiring neither theoretical study nor the acquisition of exact techniques but rather a familiarity with modern practices in business, administration practices and current conventions. Examples of this type are hospital managers, sales managers, works managers, etc. (The reaction of the management fields to this statement may be interesting to hear.)

3.3 The process of professionalisation

As can be deduced from the above, the process of professionalisation implies the extent to which an occupation has developed towards the ideal model of the full-fledged professions. Basically, the members of most occupations seem to harbour a perhaps secret ambition to possess the autonomy, prestige, power and income of the established professions. Goode (1969: 274) asks how far the process can go if, indeed, various occupations do try to rise, and many succeed to some extent, thus contributing to social change. He quotes Wilensky (1964), who offers the following steps:

- Full-time activity at the task
- Establishment of university training
- Establishment of a national professional association
- Redefinition of the core task, so as to hand the "dirty work" over to subordinates
- Conflict between the old-timers and the new men who seek to upgrade the job
- Competition between the new occupation and neighbouring ones
- Political agitation in order to gain legal protection
- Establishment of a code of ethics

However, Goode's (1969: 275) opinion is that such a concrete set of "steps" as Wilensky's is really a description of the many areas in which an emerging profession must participate in its transactions with other occupations and society. Moreover, these formal steps miss the essential elements in professionalisation. They do not pinpoint the core characteristics which are non-negotiable in the identification of a true profession. According to Goode (1969: 277–297), these are the existence of a basic body of abstract knowledge, the ideal of public service and professional autonomy.

3.4 The semi-professions: teaching, nursing and social work

The term *semi-profession* indicates that the profession in question is located somewhere along the middle of the continuum of professionalism – that is, between the full-fledged professions and those occupations which are professions in name only but do not, in fact, possess any of the attributes characterising the professions.

An occupation will be classified as a semi-profession if it lacks one or more of the professional qualities outlined above, or if one or more of these qualities are not fully developed. Thus, a semi-profession may lack a systematic theoretical knowledge base, and hence entail a shorter period of training for its members; it may not command a monopoly of control over its members; that is, over the criteria for their recruitment, training, licensing and performance; its code of ethics may be vague or

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SECTION A

inconsistent; and the professional association may be divided, inefficient or powerless (Toren 1969: 144).

Although quite a few occupations have been classified as semi-professions, for example pharmacy, optometry, librarianship, as well as laboratory, X-ray and other technicians in hospitals, the three occupations listed in Etzioni's (1969) title, that is teachers, nurses and social workers, have traditionally been viewed as *the* semi-professions.

The term *semi-profession* is preferred, according to Etzioni (1969), without any derogatory implications. Other terms that have been suggested are either more derogatory in their connotations (e.g. sub-professions or pseudo-professions) or much less established and communicative, for example heteronomous professions, a term used by Max Weber. Toren (1969: 153) writes that heteronomy means that members of the profession are guided and controlled not only from within – that is, by internalised professional norms, expert knowledge and the professional community – but also by administrative rules and by superiors in the organisational hierarchy.

Since the appearance of Etzioni's seminal work, additional books and articles have appeared on the subject, for example Toren (1972), Popple (1985), Reid and Popple (1992), and Hopps and Collins (1994). Basically, however, the impressions and interpretations Etzioni and his co-authors described and discussed in 1969 have remained remarkably unchanged. Naturally, some features of the semi-professions differ in various cultures, but on the whole there are sufficient similarities to enable the following analysis.

3.4.1 Teaching

ADMINISTRATIVE RESPONSIBILITY FOR PUBLIC EDUCATION

This has traditionally been delegated by governments to local school boards. Board members usually serve without compensation. This could shift the nature of school management in the direction of creating hierarchies that are, in any case, a feature of bureaucracies worldwide.

PROFESSIONALISATION

This is an important issue that is continually discussed among teachers. Such professionalisation can be an important factor inhibiting or limiting the actions of school boards and administrations.

THE DEVELOPMENT OF TEACHER EDUCATION IN SOUTH AFRICA: IMPLICATIONS FOR RESEARCH

Education in South Africa has always served a political purpose, with opposing points of view. In addition, as will be indicated, it has always been influenced by educational systems in other countries. In this regard, E.G. Malherbe, in a document titled *Education in a changing commonwealth,* stated many years ago that it might be said of South Africa that at no period in its history was education to any extent the spontaneous expression of the ethos, or genius, of South African people. To a very large extent her educational system has been the result of successive superimpositions of systems or bits of systems from without (Venter et al. 1980).

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On 16 June 1976 the dissatisfaction of black people with regard to, inter alia, education, reached a climax when demonstrators clashed with police. This started a period of social unrest which rapidly spread throughout the country.

The period 1980 to 1990 was marked by serious unrest and mass action. "Liberation before education" had become the rallying cry, and by October 1985 black education had broken down and this led to the establishment of the National Education Crisis Committee (NECC). Protest action was now focused on "people's education".

In February 1990, conditions changed after the unbanning of mass-based anti-apartheid organisations. However, after a decade of social upheaval and chaos in schools, the Teachers' League of South Africa (1991: 1) stated that the education of teachers was problematic since the teachers who had been educated to teach in the schools were themselves the product of highly segregated, tribalised schools. Since academic standards had collapsed at all levels, the teachers had, furthermore, to make their way through school and college or university with an inadequate background. Thus teachers could not provide effective challenges to the race-based education in which they found themselves. Moreover, they were ill prepared to utilise the school situation "to supplant gutterised schooling with a democratically orientated education both in content and in the values with which teaching is invested" (Teachers' League of South Africa 1991: 1).

One of the initiatives regarding teacher education was embodied in the "Educational renewal strategy" document produced by the Department of National Education in June 1991, which included 14 recommendations for teacher education reform. However, the teachers' ability either to endorse reform or conform to the status quo was influenced by the paradigms in which they had been schooled. In this regard, Rajah (1993) identifies three paradigms, namely the empirical-analytical, the hermeneutic and the critical. He recommends the critical paradigm for teacher education for reform and change, stating that "teacher education curricula within the critical paradigm will not only resonate with the concept of universities undergoing transformation, but will also make a contribution to the vision of a new social order characterised by justice, equality and non-exploitative economic relations" (1993: 101).

The general elections in 1994 and the subsequent change of government marked the end of apartheid education. The teacher was increasingly viewed as the main agent for change in moving towards a non-racial, non-sexist, united and democratic South Africa (Bagwandeen 1994: 15). The quality of teacher education (as initial, induction and in-service training) therefore became of the utmost importance as attempts were made to transform the education system. Some of the challenges (Bergh 1999: 6–10) were to prepare student teachers to work under varying conditions (multi-age, multilingual, multicultural and multigrade classes); to use appropriate methods for large classes; to respond to a diversity of social problems such as HIV/Aids, teenage pregnancy, youth at risk, drug abuse, street children and learners traumatised by violence; to rebuild a culture of teaching and learning; and to work under severe conditions in underdeveloped, underresourced schools.

To meet these challenges, the government put in place an array of new policies and legislation. One was the introduction of a National Qualifications Framework (NQF) under the auspices of the South African Qualifications Authority (SAQA). Another was the introduction of outcomes-based education, known in 1997 as Cur-

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riculum 2005. This revolved around education as a learner-centred, outcome-oriented activity and was based on the assumption that all individuals can learn effectively (Booyse & Kruger 2000: 411).

This new vision for teaching education was informed by international practice and educational reforms in New Zealand, the UK/Scotland, Australia and Canada (Bergh 1999: 11). This vision linked up with educational values such as

- an integrated approach to education and training
- an emphasis on human development
- the notion of lifelong learning.

The implication of the NQF for teacher education was the replacement of authoritarian, teacher-centred, single-theory approaches (e.g. Fundamental Pedagogics) with learner-oriented philosophies and theories reflecting a democratic and professional approach. Thus teacher education curricula were changed so that they would endorse principles similar to those of Curriculum 2005 for schools in the following ways:

- Regarding content, the principle of relevance was stressed.
- Methodologies in teacher education needed to change to a learner-oriented approach promoting independent and critical thought.
- New and continuous methods of assessment were required.
- New models of teaching practice needed to be considered within the context of skills development, instead of merely covering content.

Changes in education are reflected in research. Having analysed 796 articles published in the *South African Journal of Education* during the period 1981–1996, De Wet and Smith (1998: 181) came to the following conclusions:

- Education is mainly a descriptive science that concentrates on the child and the school system.
- Education is undertaken from a diversity of paradigms (13 were identified). The phenomenological (24%) and positivistic (21%) paradigms appear to be dominant.
- Theory construction in education is characterised by a lack of cooperation between part perspectives or with other disciplines, since 86 per cent of the articles were from a single part perspective of education.
- Theory construction in education focuses on both primary informal education outside the school system (12%) and secondary institutionalised education (87%); the secondary school child (11%), the school (41,3%) and the education system (14,1%) receive most attention.
- Theory construction is undertaken from quantitative (59%) and qualitative (41%) methodologies.
- Only four per cent of the articles accounted for their paradigmatic perspective and 87 per cent grounded their hypotheses or methodologies in existing theoretical frameworks.
- Approximately 28 per cent of the contributions achieved the highest level of theory construction.

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The above conclusions pose certain challenges for researchers in education. Other challenges in the field of education that indicate several research priorities for the 21st century are highlighted as follows (Department of Education 2001: 32–33):

- Providing a single, equitable system of quality education within a system of lifelong learning
- Challenging racism and inequities
- Creating a high-quality education system that is characterised by accountability, transparency and efficiency
- Challenging the demands for resources in the context of affordability
- Creating innovative partnerships with non-governmental organisations, the private sector and the international community
- Establishing functional and high-performance schools and colleges to provide quality education for all
- Building a dedicated professional community of educators
- Strengthening the further education and training sector, as well as higher education
- Developing robust quality assurance systems

3.4.2 Nursing

ADMINISTRATIVE RESPONSIBILITY

Nursing has traditionally been located in hospitals and other caring centres such as homes for the aged, although private nursing is not an unknown feature of the profession. This brief discussion will, however, be limited to hospital nursing.

THE DEVELOPMENT OF PROFESSIONALISATION

In the case of nursing this is closely linked to the relationship between the medical practitioner and the nurse. In the hospital a rather rigid social stratification system exists that places physicians at the top in a caste-like superordination above nurses. The semi-professionals, such as nurses, and laboratory and X-ray technicians, are not located on a continuum with doctors. There is no hierarchical pattern with a gradual approach to and fusion with the highest status, that is as that of a physician. Instead, the caste-like system puts an unscalable wall between the physician and the semi-professions in the hospital (Katz in Etzioni 1969: 69).

However, the modern nurse is caught in the throes of change. Let us briefly but carefully follow the nature and development of this change.

Medicine has gradually turned the nurse into an administrative specialist, while her heritage is that of bedside care for the individual patient. In most societies the development and organised deployment of knowledge is a major feature of existence. It is incorporated into the social order in two distinct ways: both formally recognised professions and complex social organisations are harnessing existing knowledge and bringing it to bear on specific problems; also, both are involved in the process of creating new knowledge (Katz 1969: 55).

In an age of high regard for science, hospitals harness both scientific and non-scientific resources for the care and treatment of patients. They do this chiefly by

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SECTION

A

admitting the non-scientific, care-minded nurse into the hospital. In return, the nurse accepts a low place in the hospital's status hierarchy. Part of the bargain is that the nurse not only helps overcome inadequacies in the scientific method of practising medicine; she also virtually takes over where scientific methods are inadequate or non-existent (as in the care of incurable and senile patients in large mental hospitals).

Hospitals are under pressure to implement existing knowledge but are, at the same time, involved in controlling knowledge. Physicians are chiefly responsible for deciding which items of knowledge are safe to use – safe for the patient and safe for their own reputations and that of the hospital. Hospital administrators are responsible for deciding which items of knowledge are too expensive to use and which items fall within the hospital's financial capacity.

The question arises, then, as to how the nurse fits into the picture of the controlled application of knowledge in the hospital situation. Two considerations emerge: How does the nurse affect the flow and use of knowledge? How does she influence the kind, that is the content, of knowledge that is used?

First, guardianship of knowledge implies that knowledge is not permitted to flow freely. Doctors do not always tell their patients the whole truth, and this is regarded as perfectly ethical professional behaviour. The nurse herself is often denied knowledge in her dealings with physicians. The traditional picture has the nurse do the doctor's bidding with unquestioning, unknowledgeable-but-always-reliable dispatch. Both nurse and physician accept the physician as the ultimate guardian of knowledge about the patient's illness. In modern hospitals one finds nurses who are satisfied with the extent of knowledge provided by the patient's chart and the doctor's verbal instructions. But one also finds nurses who want more information than doctors ordinarily give them – and physicians tend to be wary of a nurse's quest for more knowledge.

To the question of whether nurses influence the kind of knowledge that is used in the hospital, Katz (1969: 62) responds that, despite the effort of many nursing leaders for the professionalisation of nursing, the physician is still the chief determiner of the kind of knowledge that is used in the medical setting. Under pressure from their leaders to establish nursing as a full-fledged profession, nurses are trying to create a distinctive body of knowledge by doing research. Knowledge from the behavioural sciences – psychology, sociology and anthropology – has found considerable acceptance by nurses, especially those trained by universities. Recent nursing graduates are under pressure to implement it, but it is not clear to what extent nurses are actually able to put the insights into effect. Older nurses and physicians have been less receptive to the behavioural sciences. In custodial hospitals where nurses have been given fairly free rein, they have occasionally met with dramatic successes in the implementation of the behavioural sciences.

Basically, however, the nurse's traditional stance of offering "tender loving care" remains the basis of her functioning and the intrinsic reward that motivates her continuation in the profession. Her knowledge has been assumed to be the knowledge of the heart. Moreover, traditionally the whole of medicine was less scientifically focused than it is today (Katz 1969: 64). Doctors, too, were probably more humanistically inclined before the 20th century, but it was the nurse who was seen as the nurturant provider of "tender loving care". In the modern world, science has

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enjoyed great successes but has also raised issues that it has not been able to resolve. One of the fundamental unresolved issues is the problem of humanising scientific knowledge. How does one utilise scientific knowledge without destroying human rhythms? How does one develop knowledge that is specifically concerned with preserving humane considerations? There are as yet no adequate answers to these questions.

Professionalisation is a topic of intense concern in the nursing profession. Nursing leaders, especially those teaching in university schools or departments of nursing, talk a great deal about being professionals. Their objective is to give nursing full-fledged professional status. However, the legitimacy of professional guardianship of a body of knowledge depends not only on *having* a distinct body of knowledge, but on acceptance of the guardianship by those beyond, as well as those within, the ranks. In the case of the nurse, the outside acceptance would have to come from physicians and hospital administrators, and would probably require a drastic rearrangement of the social roles in the hospital. As yet – and this is probably still true in the 21st century – neither the development of a clear-cut body of professional nursing knowledge nor the acceptance of nurses as full-fledged guardians of the existing knowledge has proceeded very far.

3.4.3 Social work

■ ADMINISTRATIVE RESPONSIBILITY

This has traditionally been located in government or public departments of social welfare or private family agencies and specialised welfare organisations. Private practice has developed slowly but steadily in recent years. However, as yet, only a few private practitioners have really been able to forge a reasonably lucrative living from social work. Social workers are also employed in the private sector, where they engage in employee wellness programmes and corporate social responsibility initiatives. Social workers are increasingly also located in non-governmental organisations engaged in social service and development activities.

As pointed out in the discussions on the professionalisation of the other two semi-professions, the concerns in social work are similar: creating an indigenous knowledge base and negotiating as much autonomy as is possible or feasible in the different situations where social work is practised.

■ HISTORY

Historically, social work in South Africa was transplanted from England and, especially, the US, with little reference to the realities of this country's population composition, needs and cultures. Imported from outside, themes which have moulded the profession in the US have influenced the development of social work in South Africa to a greater extent than South Africa's own realities have done. Readers interested in the specifics of the themes referred to here may consult previous editions of this book (cf. De Vos et al. 2005: 17–19).

However, one of the themes that originated in the 1980s, namely the "practitioner-researcher paradigm" still has relevance today, albeit as the concept of "evidence-based practice", as will be briefly explicated in Chapter 3 of this book.

In addition, mention needs to be made of two themes in social research that

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SECTION

A

emerged in the 1990s, also reflected in social work and other semi-professional research endeavours, namely qualitative vis-à-vis quantitative research and participatory action research (PAR).

Martin Bloom (1995) refers to the qualitative/quantitative debate as "[t]he great philosophy of science war", an expression which may, however, be somewhat melodramatic. Researchers in the semi-professions such as education and nursing have traditionally accepted both research styles without much fuss (cf. Bryman 1988; Creswell 1994; 1998). Nursing carved a firm niche for itself in the qualitative research domain, and research experts from the nursing profession are often called in as consultants on important qualitative research projects.

Interestingly, social work has resisted accepting qualitative research longer than certain other semi-professions. Recently, however, a paradigm shift has been evolving in that researchers previously known for their strong quantitative stance have been re-evaluating the qualitative position. William Reid is one example. Known for decades as a scientist-practitioner with a strong quantitative inclination, he co-authored a book now widely used, namely *Qualitative research in social work* (Sherman & Reid 1994). Together with Riessman's (1994) anthology, Tutty, Rothery and Grinnell (1996); Padgett (1998) and many others, a new body of literature on the topic of qualitative research in social work is being created. The March 1995 issue of *Social Work Research* (Vol. 19, No. 1) was also wholly devoted to a series of articles on qualitative research in social work. This debate has now been virtually resolved in a more widespread acceptance of a "mixed methods" approach, already foreseen in the previous edition of this book (2005), and here discussed in section E, Chapter 26. Participatory action research (PAR) is described in Chapter 29 of this book. This fits in well with the wholly new approach initiated in South Africa since 1994.

As can be deduced from this brief sketch of the development of social work as a profession in South Africa, the new government in South Africa in 1994 had good reason to develop a completely new social welfare dispensation which emphasises social development rather than the traditional American and European approaches to social policy. Social development has its origins in the developing world and is increasingly being recognised as an alternative social policy approach to the residual and institutional conceptions of social welfare and social work in both developed and developing countries. The White Paper for Social Welfare adopted by the South African parliament in 1997 is based on this new social policy framework intended to transform the welfare system from a residual approach to the social development approach. Its preamble, which concludes as follows, reflects the new spirit:

> This White Paper has been drawn up with the full participation of the stakeholders in the welfare field. It is a negotiated policy framework and strategy, and it charts a new path of social welfare in the promotion of national social development. The proposed direction of the White Paper is in line with the approach advocated by the United Nations World Summit for Social Development held on 6 to 12 March 1995 (*Government Gazette*, 2 February 1996).

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The social developmental approach to social welfare and social work is intended to renew the welfare system to make it more just, equitable, diverse, participatory and

appropriate to the local context. Patel (2003) identifies the following key features of the social development approach in the South African context.

- *The rights-based approach*. This is founded on the constitutional principles promoting social and economic justice and the equitable distribution of resources favouring the most disadvantaged in the society.
- *Economic and social development*. This theme refers to the interrelationship between social and economic development, and recognises that the social welfare of the population will not automatically be achieved by growing the economy only. Substantial social investments in human development are also needed in, for example poverty reduction, urban and rural development, health, education, social security, developmental welfare services and basic infrastructure services such as water, sanitation and electricity.
- *Democracy and participation.* These are key features of the new approach, which emphasises citizen participation in service development and delivery and in promoting accountability.
- *Social development partnerships between government, the private or voluntary sectors and commercial sectors.* A leading proactive role for the state in promoting wellbeing in a collaborative partnership is envisaged, while the autonomy of its partners is acknowledged.
- *Integration of individual, family, group, organisational and community empowerment and development*. The social development approach breaks with the earlier tradition of social welfare and social work in South Africa, which was dominated by residual policies; clinical social work practice based on the medical model; and residential care. Instead, the social development approach proposes an integrated approach to social work practice that is generalist, family centred and community based, and links economic and human development goals and interventions. It also strives to achieve a better balance between remedial, protective, preventive, promotive and developmental intervention strategies within a community-based model. The social development approach reconnects with social work's earlier concerns with social justice and social reform.

Internationally, there has been a redefinition of social work and a shift in emphasis towards social change, problem solving in human relations and the empowerment of people to enhance human wellbeing (International Association of Schools of Social Work & International Federation of Social Workers 2000; Hare 2004). This new thinking in social work also resonates with the newly developed Standards for Social Work Education developed by the South African Qualifications Authority (2003). There is therefore widespread acknowledgement that social work education should equip social workers with the knowledge, skills and values to practise social work in a changing local and global context and to implement the social development approach in social work and the social services.

The social development policy has generated many debates about the status of the social work profession and its location within the new developmental welfare paradigm. A new statutory body for the social service professions was established in

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the late 1990s, recognising social work along with other social-service professions such as child and youth care, community development and probation, and accepting paraprofessionals, including auxiliary social workers. This new direction was considered by some to have resulted in the marginalisation of the social work profession, and the undermining of its standing as a profession in the post-1994 period (Gray 2000; Coughlan 2000).

McKendrick (2001: 106–107) is of the view that social work is faced with a crisis of confidence because it was associated with apartheid, casework and social control, an excessive preoccupation with professional status and a tendency to keep others out of the field. He believes, however, that social workers have the knowledge, skills and values to "guide them in becoming meaningful players in *developmental* social welfare" (McKendrick 2001: 109).

South Africa is increasingly being recognised internationally as a leader and a pioneer of the social development approach to social welfare and social work (Midgley 1996; 2001). This is an evolving approach, and innovation and good-practice lessons are being learned from the implementation of social development strategies at grass-roots level. These exemplars of the new approach provide rich opportunities for building a theory and practice of social development in the South African context. Research to develop knowledge and a critical and reflective practice is vital, and is of international significance, as many countries continue to search for more appropriate modalities in response to changing national and global needs. There is scope for the creative use of different approaches to social science research discussed in section 2.5 of this chapter. Action research to inform social change and to solve real-life social conditions, and participatory research methodologies are growing in importance in the present situation, as is intervention research. Research in the field of policy and programme development, including the monitoring and evaluation of new policies and programmes, remains a critical priority.

3.4.4 The "special case" of psychology

The question arises whether psychology, having an equally long or even longer history of working with people, should not be accorded a place in a text dealing with the caring professions.

We do not feel competent, or compelled, to evaluate psychology as a practice against the characteristics traditionally ascribed to the established professions; in fact, every profession can only do its own evaluations in this regard. Nevertheless, we do feel that psychology has developed beyond the level of any one of the occupations traditionally termed *semi-professions*. Several well-known theories have evolved within the discipline; it is practised within a code of ethics; and it probably exercises more autonomy than any other profession outside of the "big three": law, medicine and theology (Webster 1998). Thus psychology, especially clinical psychology, seems to have already come strikingly close to possessing the core attributes of a true profession.

Accordingly, it has been decided not to include a discussion, however brief, of psychology in this chapter, although its helping or caring aspect is, of course, fully recognised.

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3.5 The helping, caring or "human" professions

A glance at the various occupations which have been mentioned in the literature as semi-professions (e.g. social work, teaching, nursing, laboratory and other technicians in hospitals, pharmacy, optometry and librarianship) reveals a continuum of physical closeness to actual human beings in the daily practice of the profession. Nurses probably come closest to the bodies of their patients; teachers and social workers are sometimes placed in a position where touching a child or an adult in a loving, caring manner (such as the nurse's "tender loving care") is necessary. Technicians in hospitals sometimes touch their patients, for instance when taking X-rays, EEGs, MRs or mammograms, but this is a strictly functional, scientific kind of touch for diagnostic purposes, comparable to a doctor's physical examination. Other semi-professionals such as pharmacists, librarians and laboratory technicians fulfil their functions without needing to touch anyone.

Teaching, nursing and social work qualify as "helping" or "caring" professions if physical closeness with a view to communicating loving care and concern is the criterion. Other helping professions may also be classified in this group without necessarily involving physical touch. An element of personal concern and care is, however, necessary if a profession wishes to view itself as "helping" or "caring". Other professionals such as physiotherapists and occupational therapists should be able to place themselves on the continuum of the caring professions.

4. UNDERSTANDING THE RELATIONSHIP BETWEEN THE SCIENCES AND THE PROFESSIONS

As we have seen, scientific knowledge may be defined as the body of propositions (factual statements, hypotheses, models, theories, laws) which, at a specific time, is accepted by the scientific community as being valid and reasonably correct. The social sciences involve the study of people – their beliefs, behaviour, interaction and institutions. The ideal professions, the true, or full-fledged or established professions, are characterised by at least 11 attributes. For our convenience at this stage, the attributes are summarised as follows:

- Theoretical and practical objectives
- A main goal of public service
- Involving intellectual work requiring a high standard of responsibility; that is, involving complex tasks which are performed by the skilful application of major principles and concepts rather than by routine operation of skills
- Offering standardised training, including the utilisation of laboratories and seminars, and techniques that can be communicated by education
- Restricting its practice to a professional group that projects a strong group consciousness, which gradually develops into a professional culture sustained by formal associations wielding strong power over members of the profession, and even over training departments or schools embedded at universities
- A generally accepted code of ethics
- A codified and systematic body of professional knowledge underpinning the profession and having been effectively internalised by new members of the profession

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SECTION A

- Authority recognised by the clientele of the profession
- Broader community sanction and approval of this authority
- Commitment to continued study
- Full autonomy, financially and otherwise

The core attributes of a true profession are usually extracted from the above as the existence of a systematic body of professional knowledge underpinning the profession; an ethical stance based on professional norms of service to the community and society and formalised in a code of ethics; and genuine autonomy.

The professional knowledge underpinning a true profession is assumed, in a Western or Westernised society, to be mainly scientific knowledge. Other kinds of knowledge, such as generalisations gleaned from daily practical experience, are inevitably part of this knowledge base, even in the established professions. However, until these generalisations have been systematised, validated and codified, they cannot qualify as scientific knowledge. This is where research plays a crucial role.

Since the caring professions deal with the education, nursing and social development of individuals, families and communities, or with structural changes of whole societies (i.e. with people), and the social sciences involve the scientific study of people (i.e. their beliefs, behaviour, interaction, institutions, etc.), it seems logical that the systematic professional knowledge underpinning a human profession (whether existing or embryonic) can only be termed a social science.

The main task ahead of the human service professions is thus to transform the generalisations gleaned from the practical day-to-day experiences of these professionals into scientific propositions. How this may be done forms the thematic content of chapters 2 and 3.

SUMMARY

This chapter explains the nature of the sciences and the professions, sketching some aspects of the relationship between them. Science is described as a system for producing valid and correct knowledge, and the knowledge itself produced by that system (process and product). The knowledge system is broadly classified into the natural sciences, social sciences and humanities. Seven main approaches to social science are identified: positivist, postpositivist, constructionist, interpretive, the critical social science approach, feminist and postmodernistic.

A profession is defined as an occupation involving a liberal education and mental rather than manual labour, such as law, medicine or theology. Among the human service professions, teaching, nursing and social work are considered well-known "semi-professions". The professional knowledge underpinning a profession is mainly scientific knowledge, consisting of, among other things, generalisations gleaned from the daily practice of the profession. However, until such generalisations have been systematised, validated and codified, they cannot qualify as scientific knowledge. The main task ahead of the human service professions is to transform these generalisations into testable scientific hypotheses that may eventually become the propositions as cornerstones of true scientific theory underpinning the professions.

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Self-evaluation and group discussion

- Which of the subjects you have studied thus far do you consider to be true sciences? For what reason or reasons?
- Do you plan to enter a specific profession? If so, in which group of professions would you place this profession. Why?

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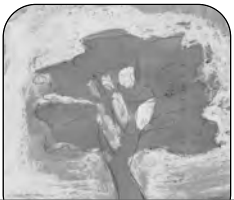

2

AS DE VOS & H STRYDOM

Scientific theory and professional research

Learning objectives

Studying this chapter should enable the reader to

- discover the meaning of the terms *scientific theory* and *professional research*
- gain a perspective on the relationship between scientific theory and professional research.

1. INTRODUCTION

In the final section of Chapter 1, it was argued that it is an attribute of all true professions that they rest on a foundation of solid scientific knowledge. Those occupations that aspire to full-fledged professional status are therefore obliged to develop an indigenous scientific knowledge base which has been convincingly systematised, codified and validated. Teaching, nursing and social work, among the caring professions that have long aspired to such professional status, have not as yet developed a convincing, relevant knowledge base. An important reason is that there is a paucity of professionally relevant research activity in these professions. Leaders in the nursing profession have perhaps invested more time and energy in this endeavour than certain other caring professions. A possible reason for such paucity or lack of relevant research activity may be an insufficient understanding of the nature and role of scientific theory in professional research. These topics are addressed in this chapter, while Chapter 3 will examine the relationship between professional research and practice.

This chapter examines the context of scientific theory holistically; that is, it examines the components or structure of science, the concepts, constructs, variables and attributes or characteristics, as well as the statements, conceptual frameworks and paradigms. The theme will be approached in a funnel-like manner, from the

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bottom to the top, dealing first with concepts and variables, then with statements and conceptual frameworks (of which theory is one example), and finally with paradigms.

2. CONCEPTS

2.1 Definition of concepts

Terms (one or more words designating a specific idea or notion or concept) must be available for those aspects of the world that constitute the subject matter of a given scientific discipline. Thus the specific things about which a science tries to make sense are its concepts. These concepts become theoretical structures which are being tested empirically for internal consistency. Scientists should always realise that the concepts they use are man-made terms that may or may not exhibit a close relationship to reality (Kerlinger & Lee 2000: 5). A distinction should also be made between well and badly defined descriptive concepts. In addition, researchers should be aware of the fact that some concepts are more significant than others.

2.2 Conceptualisation

Through our senses, we are continually receiving information about the world. The sensations we receive make impressions on our minds that we call perceptions. Every day we experience an enormous variety of perceptions. This bombardment of raw experience would be totally bewildering were it not for the fact that the mind is able to organise its perceptions into a much smaller number of categories. A concept is thus a category of perceptions or experiences. We label concepts with words (terms) and this allows us to think about them and communicate them to other people. We call the process of categorising and labelling information *conceptualisation* (Schuerman 1983: 12–13).

However, the question arises, how do we go about categorising and labelling these impressions – that is how do we go about conceptualising in our minds? Powers, Meenaghan and Toomey (1985: 133) explain that a concept reflects the similarities in otherwise different phenomena. This can best be explained by an example.

The term or word *tree* points to a thought which is formed in people's minds when we see (are confronted with the sense perception of) a certain phenomenon consisting of other phenomena which we call roots, a trunk, branches and leaves. Examples of this concept, which we call a tree, can differ greatly from one another: some have red leaves (the decorative prune tree), others have fine straight leaves like needles (the pine tree), others (the bonsai) are no taller than 30 cm, while yet others, such as the well-known Big Tree near Storms River, South Africa, towers into the air, reaching a breathtaking height. That which they all have in common with one another is their "tree-ness" – that is, the exact way in which the phenomena which we call roots, a trunk, branches and leaves are arranged with regard to each other: first the roots under the ground, from which the trunk rises above the ground in one tall or not-so-tall cylinder, then the branches which spread out much as the roots do underground, then the leaves growing on the branches. This treeness, however, is a generalisation: it is also abstract and, therefore, unreal. We can

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see trees of a great variety that are very different from one another, but we cannot see "tree-ness," the abstraction or rationale or thought process that occurs in our minds when we see all these trees, and see that they are similar in their "tree-ness", and we make the intellectual processing of abstracting the common characteristics they all share to make up their "tree-ness".

This, then, is what conceptualisation is: the thought process going on in our minds when we gather impressions or perceptions, observe their similarities, put their similarities together to make up a new single thought which expresses the similarities, and then give it a name. Once we have given it a name, it becomes a concept.

Bredemeier and Stephenson (1962: 2) quote the phenomenon Walter Lippmann has summarised in his famous aphorism: "First we look, then we name, and only then do we see". You have to name a thing *a chair* before you see (i.e. respond to) it as something to be sat upon. You have to name a person *a lecturer* before you see him as someone to be listened to.

The main objective of this kind of conceptualisation is simply communication. As conceptualisation is a process that is eventually expressed in words belonging to a particular language, this enables people to communicate. They can communicate with one another because they all now know what is meant by words such as tree, house, dog or parliament.

2.3 Concepts and constructs

The terms *concept* and *construct* have similar meanings, yet there is an important distinction. Kerlinger and Lee (2000: 40) see a construct as being definable in certain related concepts that makes it possible to generalise from particulars to other related observations of a particular concept. A construct can be delineated into directly observed concepts invented for a specific purpose such as, for instance, *mental state*, that can be delineated into concepts such as *love*, *aggression* and *hunger* (Kerlinger & Lee 2000: 40; Mitchell & Jolley 2001: 21).

Ordinary concepts can thus be combined into higher-order concepts which can be called constructs.

Abstract concepts – that is, constructs – are very useful in developing theory and in bringing seemingly diverse phenomena together into an explanatory framework. The terms *concept* and *construct* can thus be viewed as having similar meanings with the important distinction that a concept expresses an abstraction formed by generalisation from particulars that are usually similarities, as we have seen. A construct, however, has the added meaning of having been deliberately and consciously invented or adopted from ordinary language for a special scientific purpose or theoretical framework.

Mouton and Marais (1990: 60; 127) explain that the fact that concepts acquire meaning, or even new meaning, within a conceptual framework such as a theory, a model or a typology, has led philosophers of science to refer to such concepts as constructs. However, the authors ask: Do such constructs refer to real entities or structures? If a specific term is developed entirely within the framework of a specific theory, does it have an existence independent of that theory? Can entities or structures such as the id, ego and superego (Freud), cognitive dissonance (Festinger), labelling

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(Becker), anomie (Durkheim), and so on be said to exist, or are they merely fictitious creations of highly imaginative social scientists? The question has still not really been answered (Mouton 1996a: 183).

We suggest that such constructs do exist independently of a specific theory. Originally they must have been impressions received by the relevant authors, often from formal or even informal research conducted by these scientists. The findings of their research (notably those of Festinger and Durkheim among the list cited above) created a need for naming these impressions or results. To the extent that the scientific community recognised the existence of such conceptions, they adopted the terms suggested by the original researchers and these gradually became part of the vocabulary of social science. Sometimes these terms are used even outside the scientific community by people who have read about them, understood their meaning and thus also recognised their existence. For them the original theoretical framework hardly exists. A notable, even notorious example is the use of *paradigm*, originally coined by Thomas Kuhn, which is now widely used in all sorts of contexts outside philosophy of science. (The disadvantage of such wide acceptance is that the meaning is being tampered with at every new usage; in fact, relatively few people who bandy *paradigm* around will be fully conversant with its birth and development.)

The implication of the argument above is that only those constructs that are recognised as names for impressions one has been familiar with half-unconsciously, but did not have a term for, will live on and thus justify their existence outside the original conceptual frame. This is, however, not entirely true. Many such terms coined by social researchers never reach the ordinary public. They may yet have an independent existence, in spite of unfamiliarity. Only further research can validate or invalidate such existence.

For the qualitative researcher, concepts and constructs are meaningful words that can be analysed in their own right to gain a greater depth of understanding of a given concept. It often happens that qualitative researchers will conduct an etymological analysis of a concept as part of their description of a phenomenon. Such researchers will then interpret the phenomenon on the basis of the wealth of meaning in the concept. Quantitative researchers, on the other hand, are likely to choose concepts, or even to create words, in such a manner that no more than a single meaning can be attached to the word that they choose (Mouton & Marais 1990: 160).

2.4 Connotative and denotative meanings of concepts and constructs

It is important that researchers understand the implications of connotative and denotative meanings of concepts and constructs, as such understanding can only enhance the precision of thinking about – and thus the precision of execution of – their research projects.

Ever since John Stuart Mill drew a distinction between the two constitutive elements of meaning, namely connotation and denotation, in his *System of logic (1852)*, it has become common practice to distinguish between them (Mouton & Marais 1990: 126). Ever since, the connotative meaning of a word – or scientific/technical term – has been associated with the class of objects to which the object or word

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belongs. Such connotations make it possible for us to communicate more rapidly, as by pointing and saying: "That is a prunus", meaning that it is a tree (connotation) and the kind of tree it is, is a prunus tree (denotation). The denotative meaning thus specifies or indicates the specific one selected from a class.

2.5 Concepts, variables and attributes (characteristics)

Kerlinger and Lee (2000: 40–41) introduce the subject of concepts, constructs and variables by stating that scientists somewhat loosely call the constructs or properties they study *variables*. Examples of important variables in sociology, psychology and education are gender, income, education, social class, organisational productivity, occupational mobility and achievement. It may be said that a variable is a property that takes on different values, or a variable is something that varies. While this gives us an intuitive notion of what variables are, we need a definition that is at once more general and more precise.

A variable is a symbol to which numerals or values are assigned. For instance, x is a variable: it is a symbol to which we assign numerical values. The variable x may take on any justifiable set of values – for example scores on an intelligence test or an attitude scale. In the case of intelligence we assign to x a set of numerical values yielded by the procedure designated in a specified test of intelligence. This set of values ranges from low to high, say from 50–150.

A variable, x, may, however, have only two values. If gender (male/female) is the construct under study, then x can be assigned 1 and 0, 1 standing for one of the genders and 0 for the other. It is still a variable. Other examples of two-valued variables are alive/dead, citizen/non-citizen, middle class/working class and teacher/non-teacher. Such variables are called dichotomies or dichotomous variables.

Concepts can refer to a fixed phenomenon (e.g. the ideal type of bureaucracy) or they can indicate variation in quantity, intensity or amount (e.g. level of education). The second type of concept concerns variables. Once you begin to look for them, you will see variables all over. As mentioned before, gender is a variable; it can take on two values, male or female. Marital status is a variable; it can take on the values of never married/single, married, divorced or widowed.

The values or the categories of a variable are its attributes or characteristics. It is easy to confuse variables with attributes. Variables and attributes are related, but they have distinct purposes. The confusion arises because the attribute of one variable can itself become a separate variable with a slight change in definition. The distinction is between concepts themselves that vary and conditions within concepts that vary. For example, *male* is not a variable; it describes a category of gender that is an attribute of the variable gender. Yet a related idea, such as degree of masculinity, is a variable. It describes the intensity or strength of attachment to attitudes, beliefs and behaviours associated with the concept of masculinity within a culture. *Married* is not a variable; it is an attribute of the variable marital status. Related ideas such as number of years married or depth of commitment to a marriage are variables (Neuman 2000: 127).

Mouton and Marais (1990: 129) also note that it is common practice among social scientists to refer to the characteristics of the research object that is being investi-

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gated as variables. Strictly speaking, however, this is an abbreviated form of indicating characteristics that are variable.

One needs, therefore, to redefine concepts of interest in a quantitative research project in the language of variables. As the examples of variables and attributes illustrate, slight changes in definition alter a non-variable into a variable concept. As noted before, concepts are the building blocks of theory; they organise thinking about the social world. Clear concepts with careful definitions are essential in theory (Neuman 2000: 127).

3. STATEMENTS

Mouton and Marais (1990: 4) define statements as sentences in which an identifiable epistemic claim is made (*episteme* is the Greek word for true knowledge). The basic components or building blocks (Mouton 1996a: 179; Neuman 2000: 42) of scientific knowledge and of theories are concepts and variables, which are used when formulating sentences generally known as propositions. Sets of propositions in turn may be interrelated to form theories, although some theories consist of a single proposition. However, before we can explore concepts and conceptualisation, we must look at the nature of these statements, which may be definitions, propositions or hypotheses.

3.1 Definitions

3.1.1 Theoretical or constitutive or connotative definitions

Definitions are used to facilitate communication and argument to the extent that they make it possible to say something more easily and clearly than would otherwise be possible. In particular, technical terms that are either selected from everyday speech or developed in a scientific discipline need to be defined carefully in order to avoid vagueness or ambiguity.

Terms used in the sciences may be defined in two ways. First, we may define a word by using other words (sometimes called a verbal or theoretical definition) (Kerlinger & Lee 2000: 41–42), a constitutive definition, meaning a definition that defines a construct by means of other constructs. Second, we may formulate an operational definition by specifying the activities or operations necessary to measure it. In this section we shall first examine theoretical or constitutive definitions.

The most basic type of definition is the ostensive, where someone points to an example of a class of objects and says, “This is a chair”. When, on the other hand, a term is defined by means of other words, we are dealing with verbal definitions. Some of these attempt to assert something that could be more or less truthful, while certain others may not assume anything that could be proved either true or false. The scientist is, of course, mainly interested in truth-asserting definitions. The most elementary of the verbal definitions are sometimes called enumerative. The concept is defined by making a list of the elements or attributes contained in the concept (Mouton 1996a: 187) that convey an idea of the thing defined.

Zetterberg (1966: 40) quotes the example of military morale, which is a difficult concept to define for research purposes. Nevertheless, when one enumerates its attributes or characteristics as confidence in officers, confidence in training, confi-

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dence in equipment, confidence in rear echelons, identification with the war effort, hatred of the enemy, satisfaction with the task assigned, friendship with fellow soldiers, satisfaction with the military system or rewards, we gain some idea of military morale. However, enumerative definitions present two problems. The attributes enumerated may be empirically unrelated and may have no conceptual attribute in common.

These problems are avoided by the conventional Aristotelian definition. In this kind of definition there are always two attributes in common. One attribute is shared with the larger class to which the concept belongs (traditionally called the *genus proximum*); another is peculiar to that particular class of concept (the *differentia specifica*). Thus, military morale is defined as a disposition to act together (*genus proximum*) toward a goal (*differentia specifica*). Both enumerative and Aristotelian definitions can be viewed as theoretical or connotative – the latter term being that preferred by Mouton (1996a: 187) – in contradistinction to operational (or denotative) definitions.

3.1.2 Operational definitions

As mentioned above, an operational definition assigns meaning to a construct or a variable by specifying the activities or operations necessary to measure it. An operational definition is a sort of manual of instructions to the investigator. It says, in effect, "Do so-and-so in such-and-such a manner". In short, it defines or gives meaning to a variable by spelling out what the investigator must do to measure it (Kerlinger & Lee 2000: 42–43).

The aim of an operational definition is to identify the indicators, the specific events or phenomena that truthfully represent an abstract concept. We have to realise that many social science concepts are not directly observable. We cannot observe education, culture or ethnicity directly in the sense that we can see a school building or a painting. On the other hand, while we cannot see education, we can observe its manifestations: the fact that certain people manifest behaviour that we define as typical of educated people, for instance that they are more knowledgeable and more learned and skilled in some areas of life (cf. Mouton 1996a: 189).

Mouton (1996a: 189–190) summarises this as follows: theoretical definitions specify the connotation of concepts, and operational definitions make the denotations of a concept explicit. One could argue that a theoretical definition spells out what is meant or intended by a certain concept, whereas operational definitions link a concept with certain clearly identifiable objects in the social world. This linkage is established by clearly identifying the valid indicators of the variable.

3.2 Propositions and hypotheses

Dubin (1969: 166) defines a proposition as a truth statement about a theoretical model (or theory). According to Neuman (2000: 47), many theories make a causal statement, or a proposition, about the relation between variables. He quotes Turner's definition (1985: 25) that a proposition is a theoretical statement that specifies the connection between two or more variables, informing us how variation in one concept is accounted for by variation in another. It is a relationship expressed in a

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theory, such as: Economic distress among the white population caused an increase in mob violence against African-Americans.

However, propositions need to be tested against reality before they can be accepted as a valid theory or part of a valid theory. When a researcher empirically tests or evaluates such a proposition, it becomes a hypothesis. Only after many careful tests of a hypothesis to confirm the proposition does the scientific community begin to develop confidence that the proposition is true (cf. Neuman 2000: 47).

Kerlinger and Lee (2000: 15) define a hypothesis as a conjectural statement of the relation between two or more variables. Hypotheses are always in declarative sentence form, and they relate, either generally or specifically, variables to variables. There are two criteria for good hypotheses. First, hypotheses are statements about the relations between variables. Second, hypotheses carry clear implications for testing the stated relations. These criteria mean, therefore, that hypothesis statements contain two or more variables that are measurable or potentially measurable, and that they specify how the variables are related.

We can thus see that a proposition and a hypothesis are basically the same thing, except that a proposition states, "This thing is so", while a hypothesis asks, "Is this thing so?" or states, "I think this thing is so, but I will find out" (e.g. by doing research).

A researcher can thus experiment with statements, formulating the same scientific sentence as a proposition and/or as a hypothesis. The one is indeed a mirror of the other (a metaphor used by Dubin). Dubin (1969: 212) points out that the hypotheses that mirror the propositions of a theory are our linkages between the empirical world and our theories about it. When a scientist asserts that he is testing a hypothesis, this is in turn a test of the theory from which the hypothesis may be derived.

Neuman (2000: 61) succinctly summarises what has been stated above as follows: theory develops from the ground up as the researchers gather and analyse the data. Theory emerges slowly, concept by concept, and proposition by proposition, in a specific area. Over time, the concepts and empirical generalisations emerge and mature. Soon, relationships become visible, and researchers combine knowledge from different studies into more abstract theory.

4. CONCEPTUAL FRAMEWORKS

In order to come to grips with the nature of theory and its role in professional research, we need to look at the notion of conceptual frameworks.

The term *conceptual framework* is traditionally used in methodology textbooks without its exact meaning being clarified. Thus, for example, Riley (1963: 5–6) writes that the research process starts with a conceptual model, or an organising image, of the phenomena to be investigated. That is it starts with a set of ideas – whether vague hunches or clearly formulated propositions – about the nature of these phenomena. It is this conceptual model that determines which questions are to be answered by the research, and how empirical procedures are to be used as tools in finding answers to these questions. Dubin (1969: 27–28) states, perhaps tongue in cheek, that concepts may mean whole theories or laws of science or even those conceptual frameworks so dear to the heart of behavioural scientists.

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Authors in the field of qualitative research are even more vague and confused. Janesick (in Denzin & Lincoln 1994: 212), for instance, states that the qualitative researcher early on identifies his biases and articulates the ideology or conceptual frame for the study. It is unclear whether an ideology and conceptual frame are meant to be synonyms, but the context seems to imply it. Rist (in Denzin & Lincoln 1994: 545) also uses the term *conceptual frameworks* loosely, as does Creswell (2003: 3–23).

However, Mouton and Marais (1990: 60; 136–144) clarify the issue by stating that when scientific statements are integrated into conceptual frameworks, we find the familiar structures of science: typologies, theories and models. The nature of the conceptual framework is determined by the function that the framework has to fulfil. Thus, a typology fulfils the function of classifying or categorising; a model also classifies but its basic function is heuristic, that is discovering or exposing certain relationships between concepts; and a theory classifies and discovers, but its basic function is explanation or understanding.

4.1 Typologies

A typology may be defined as a conceptual framework in which phenomena are classified in terms of characteristics that they have in common with other phenomena. While classification is one of the more basic functions of all conceptual frameworks, it is the specific function of typologies.

The criteria of good classification, and for that reason also of typologies and taxonomies, are exhaustiveness and mutual exclusiveness. As far as possible, a given type should include all possible relevant characteristics that are associated in a single classification (exhaustiveness). In addition, the different types that comprise the typology should, as far as possible, be mutually exclusive. Any overlap between categories ought to be eliminated through a process of further refinement (exclusiveness).

The difference between typologies and taxonomies is that they are used in the human and natural sciences respectively. A taxonomy is a classification of the objects of a particular natural science, for instance in botany, of trees and plants; in biology, of animals. A typology is a classification used in any one of the human sciences, for instance in psychology or sociology. The basic difference lies in the exactness of the sciences. The categories of taxonomies are usually strictly exhaustive and exclusive; the categories in typologies are porous, that is an object can sometimes be classified in two or more categories.

4.2 Models

Bailey (1994: 322) defines a model as a copy, replica or analogy that differs from the real thing in some way. This difference may be only in size, such as a model ship that is accurate and seaworthy in every detail, except that it is small enough to fit into a bottle. Other models may be full size or giant size, but may not be complete in every detail, including only those features of the real thing that are necessary for the modeller's purpose. A social science model is one that consists mainly of words, a description of a social phenomenon, abstracting the main features of the phenomenon without an attempt to explain it or predict anything from the description.

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Thus, the goal with social science models is not necessarily to include all features of the system being modelled but only those necessary for research purposes. Frequently, not all the important features can be adequately modelled because of complexity or lack of information, and the researcher must be content with an incomplete model, a skeletal model or a model with some of the variables or components represented by question marks.

Barker (2003: 276) sees a model as a representation of reality where social workers, for instance, use the life model to represent the interaction of forces to be found in the client's environment that influence and are influenced by the client. Doing research is, in effect, setting up models of what reality is supposed to be and then testing the models against empirical data. The model springs from a theory. Mouton and Marais (1990: 139–144) argue, however, that the heuristic or discovering function is the most common characteristic of models, while the explanatory function is usually attributed to theories. Let us follow their argument as paraphrased below.

The key issue to bear in mind, when either studying or using a model, is that it does not pretend to be more than a partial representation of a given phenomenon. A model merely agrees in broad outline with the phenomenon of which it is a model. Certain characteristics of the phenomenon, irrelevant for the model, are conveniently excluded, while the most obvious aspects are emphasised. The value of this simplification is that it draws the attention of the researcher to specific themes. It is this guiding function of models that is referred to as the heuristic function, where *heuristic* means serving to guide, discover, store and access information by reducing more complex concepts to simpler ones (Barker 2003: 195). The model is, therefore, used to suggest new areas of research because certain relationships and dimensions are emphasised to an unusual degree.

4.3 Theories

Barker (2003: 434) defines theory as a set of interrelated hypotheses, concepts, constructs, definitions and propositions that present a systematic view of phenomena based on facts and observations, with the purpose of explaining and predicting the phenomena. This definition is very dense, containing meanings that need clarification. We shall return to it at a later stage.

Bailey (1994: 41) points out that there are a number of different conceptions of theory. The sociological classics (e.g. the writings of Emile Durkheim, Karl Marx and Max Weber) are often called *theory*, as are sets of untestable statements. The term as used in everyday conversation defines theory as a possible but untested explanation (as in "I don't know exactly what happened but I've got a theory ... "). This is basically the sense in which social scientists use the term, except that they apply it to concepts that, although untested, are potentially testable.

Theory is an attempt to explain and/or predict a particular phenomenon. In Bailey's (1994: 41) exact words: "A statement that does not seek to explain or predict anything is not a theory." This implies the first characteristic or attribute of a scientific theory. The second is that a theory must be testable, at least ultimately. Statements that cannot be tested at present simply because a test would be prohibitively expensive nevertheless constitute a theory inasmuch as they are inherently

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testable, while a statement that is true by definition, inherently self-contradictory, or too vague to be understandable is not an adequate theory.

Like Bailey (1994: 41) quoted above, Mouton and Marais (1990: 142) maintain that, in addition to the classifying and heuristic functions of typologies and models, theories may be distinguished on the basis of the fact that they are also aimed at explaining and predicting phenomena or events:

- An explanation is usually an answer to a why question or, stated differently, a phenomenon is explained when one indicates why it has occurred. This implies that explanations are always explanations in terms of causes or in terms of reasons.
- Causal or rational explanations may be either universal or contextual. In the first case the explanation occurs in terms of some physical law or generalisation. In the second case the phenomenon is explained in terms of the specific contextual factors that prevail.
- Scientific explanation entails, to a greater or lesser extent, the association of a given (observable) phenomenon or event with an inferred or underlying mechanism or structure. Neuman (2000: 46) asserts that theories contain many concepts, the definitions of such concepts, and assumptions. More significantly, theories specify how concepts relate to one another. Theories tell us whether or not concepts are related and, if they are, how they relate to each other. In addition, theories state why the relationship does or does not exist.

What we have learned about theory thus far may be summarised and amplified as follows:

- In the social sciences, the ideal type of theory is almost universally presented in the form of words, that is sentences or statements most often called empirically tested propositions that, if not yet tested, are at least potentially testable. These propositions are woven into a network of integrated statements with a view to understanding, explaining and predicting the behaviour of a phenomenon or phenomena within a specified discipline or real-world domain. Such a network of propositions integrated with certain goals (or, if one wishes to be more precise, objectives such as understanding, explaining and predicting) qualifies for acceptance by the scientific community within that discipline or domain as scientific theory. (The hope has been expressed that the development of theory may in future, even in the social sciences, permit statements in mathematical form, such as Einstein's $E = MC^2$. For the present, however, we have to make do with propositions as the building blocks of theory.)
- When analysed, each proposition seems to consist of at least two concepts or constructs placed in a relationship to each other within the proposition, for example "Economic distress among whites (can cause) mob violence against African Americans". Such a proposition may be associative or causal. Sometimes a single such proposition can serve as a theory.
- Such scientific theory is viewed as one of the conceptual frameworks or "structures of science", according to Mouton and Marais (1990: 136), the others being typologies and models.

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- A deficiency of this view is that the static form of the metaphor used to explain the concept of theory (building blocks, frameworks, structures of science) does not do justice to the fact that these concepts or constructs of which the theory consists are usually in constant dynamic interaction with each other. However, for the present the metaphor is accepted for analytical purposes.
- An important aspect to keep in mind in our exploration of the nature of scientific theory is that theory in the social sciences comes in three packages or levels: grand theory (cf. Timasheff & Theodorson 1976: 284), theories of the middle range (cf. Timasheff & Theodorson 1976: 262), and low-level or ad hoc theories, built to explain a given set of data (Loeb in Kogan 1959: 6). However, what most authors seem to miss is that these three levels are also in intimate dynamic interaction with one another. Grand theories provide the background for the selection of certain areas of inquiry where middle range theories are developed. Middle range theories should be able to contribute to the corpus of grand theories within a discipline. Within middle range domains, yet smaller studies are often undertaken with a view to solving specific practical problems, especially in the professions. This kind of research is also termed *action research*, and recently, when appropriate, *participatory action research*.
- Research questions or problems triggered by a conceptual framework, especially by a model or theory, set the ball rolling for the initiation of the research process as we present it in Chapter 4 of this book. From the research findings, whether organised into a new conceptual framework (or a new theory), or whether still loose findings whose meaning has nevertheless been interpreted in terms of a scientific theory, the new concepts have to be translated into a form that can be utilised in a profession (e.g. Rothman & Thomas's "Knowledge Utilisation" or KU; cf. 1994: Chapter 28); or redefined for the purpose of commencing new research needed in order to answer new questions or address new problems that may have emerged from the research findings.
- Many an innovative model builder views the processes of doing research and practising a profession as basically similar processes. Well-known examples of such models are those of Eaton (1959), Duehn (1981) and Powers et al. (1985). In each case the concept of problem solving bridges the two kinds of activities.

4.4 Models and theories compared

Mouton and Marais (1990: 138) mention that it is generally accepted that theories and models bear a number of important similarities. Some authors maintain that the differences between models and theories are largely differences of degree. However, Mouton and Marais point out, as we have seen, that the main difference lies in the function each conceptual framework respectively fulfils: typologies, that of classification; models, a heuristic function; and theories, an explanatory function.

A significant difference is identified by Mouton and Marais (1990: 143) as the fourth characteristic of theories, namely that, because theories explain phenomena by identifying specific causes of the phenomena, the relationship between the theory (an explanation) and the phenomenon or phenomena that it explains (the so-

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called explanandum or explananda) is much more specific than the relationship between a model and the phenomenon to which the model relates. Since a model is deliberately used to simplify and abstract, it is typified as an "as if" framework. A theory, on the other hand, postulates real relationships between real phenomena or variables and, for this reason, it must be empirically testable.

Kerlinger and Lee (2000: 11–12) hint that a model springs from a theory. This further indicates that Kerlinger and Lee are basically strong proponents of the quantitative approach in behavioural research which, as we have seen in Chapter 1, models itself proudly on the physical and other natural sciences. Some scholars (e.g. Gorrell 1981) maintain that in the natural sciences, theories are first developed, and then models are extracted from those theories in order to test certain aspects of the theory or generate new questions or hypotheses from the theory. Scientists have, according to legend, built innumerable models from Einstein's theory of relativity to produce the mass of research on relativity (and subsequent technological wonders) that exists. In the social sciences, however, models are more often first constructed – preferably from the findings of empirical research and from the answers to the questions posed by the model – and only then does a theory slowly emerge. In this regard, Dubin (1969: 28) states: "It is only when concepts are put together into models of the perceived world that theories emerge."

A respected South African natural scientist (Alberts 2002) has, however, questioned this statement, arguing that he has known a natural science to develop a model or models prior to the emergence of a theory from the model/s. He also questions the validity of the view that social scientists always first develop models prior to the emergence of a theory from the models, and suggests instead that they may, at times, first postulate a theory and then build a model or models from that theory.

5. PARADIGMS

5.1 The term *paradigm*

The term *paradigm* originated in linguistics, where it means the various forms that a word can take in some languages, according to the declension (when a noun) or conjugation (when a verb) of that word, especially as a model for other similar nouns or verbs. Learners who have studied French or Latin at school know these paradigms. Barker (2003: 312) defines a paradigm as a model or pattern containing a set of legitimated assumptions and a design for collecting and interpreting data. The quantitative and qualitative paradigms in research come to mind in this regard.

In the sciences the term has its origin in Thomas Kuhn's *The structure of scientific revolutions (1970)*, where the author uses this concept with reference to the nature, growth and development of the sciences – specifically the natural sciences. According to Kuhn, a period of so-called normal scientific endeavour is followed by a scientific revolution, which is again followed by a consecutive period of normal scientific activity within the new paradigm that evolved during the revolution (cf. Mouton & Marais 1990: 145–146; Mouton 1996a: 15–16). The terms *model* and *pattern*, do not, however, refer to this pattern of *normal science-scientific revolution-normal science*, but to the way in which the researcher or scientist views his or her

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material. Examples quoted by Mouton and Marais (1990: 145) are Aristotle's theory of motion, Lyell's geological theory and Franklin's theory of electricity. Kuhn calls this a model or pattern according to which scientists view their objects of research within their particular discipline, a paradigm. The period before the appearance of paradigms in a particular science is called the pre-paradigmatic period. Kuhn (1970: 4–5) describes the pre-paradigmatic phase as follows:

> The early developmental stages of most sciences have been characterized by continual competition between a number of distinct views of nature, each partially derived from, and all roughly compatible with, the dictates of scientific observation and method. ... Effective research scarcely begins before a scientific community thinks it has acquired firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions?

From the struggle of trying to forge answers to questions such as these, paradigms in a science are born.

5.2 Paradigms in the social sciences

According to Mouton and Marais (1990: 150), Kuhn's use of the term *paradigm* and the supporting theory of paradigms has had a major impact on the philosophy and methodology of the social sciences. Following Kuhn's historical analysis of the physical sciences, a veritable flood of studies, in which similar meta-analyses of the social sciences were undertaken, appeared in the 1970s. Typically, the following questions were addressed: Where are the boundaries between paradigms? Which paradigm is currently the dominant one in a given discipline? Quite often the conclusion was reached that a given discipline accommodated a variety of competing paradigms, which obviously implies that the social sciences must still be struggling in a pre-paradigmatic phase.

Kuhn (1970: vii–viii) relates that, after spending a year in a community composed predominantly of social scientists, he was confronted with unanticipated problems about the differences between such communities and those of the natural scientists among whom he had been trained. He was particularly struck by the number and extent of the overt disagreements between social scientists about the nature of legitimate scientific problems and methods. The inevitable implication is that, in terms of his description of the pre-paradigmatic phase, these sciences must still be in this phase. This becomes clear as the text of his treatise develops. Some human scientists have strongly objected to this view, while others have accepted it (cf. Eckberg & Hill in Gutting 1980).

The important point is that all scientific research is conducted within a specific paradigm, or way of viewing one's research material. Researchers must, therefore, decide within what paradigm they are working, know the nature of their selected paradigm very well, and spell this out in their research report in order to keep communication with their reading public clear and unambiguous.

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SECTION A

6. RESEARCH, SOCIAL SCIENCE RESEARCH AND PROFESSIONAL RESEARCH

6.1 Research

Kerlinger and Lee (2000: 14) define scientific research as the systematic, controlled, empirical and critical investigation of natural phenomena, guided by theory and hypotheses about the presumed relations among such phenomena.

In this definition the authors stress two points: first, when we say that scientific research is systematic and controlled, we mean, in effect, that scientific investigation is so ordered that investigators can have critical confidence in research outcomes. Second, scientific investigation is empirical. If scientists believe something is so, they must somehow or other put their belief to a test outside themselves. Subjective belief, in other words, must be checked against objective reality. They must be hypercritical of the results of their own and others' research. Though it is easy to err, to exaggerate, to over-generalise when writing up one's own work, it is not easy to escape the sense that scientific eyes are constantly peering over one's shoulder (Kerlinger & Lee 2000: 14). This is an example of the role of the scientific community described in Chapter 1, and here described as subjectively experienced, even in its physical absence.

6.2 Social science research

Barker (2003: 406) and Neuman (2000: 6) state that research in the social sciences involves the study of people's beliefs, behaviour, interaction and institutions in order to test hypotheses, acquire information and solve problems pertaining to human interrelationships.

Social science research is defined by Mouton and Marais (1990: 7) as a collaborative human activity in which social reality is studied objectively with the aim of gaining a valid understanding of it. Referring back to Kerlinger and Lee's (2000: 14) definition of scientific research, we may say that, for our purposes, social science research is the systematic, controlled, empirical and critical investigation of social phenomena, guided by theory and hypotheses about the presumed relations between such phenomena.

6.3 Professional research

In this book a paradigm shift from exclusively practical problem-solving research towards social scientific research in the professions is proposed. In social work, for example, authors were in the past obliged to stress the differentiation of professional research from social scientific research. Thus, Rubin and Babbie (2005: 3–17) explain that in social work research, as distinguished from social scientific research in other disciplines, the impetus for selecting a topic should come from decisions confronting social service agencies or the information needed to solve practical problems in social welfare. A study is likely to have value to the social work field (and to be considered social work research) if a topic is selected because it addresses the information needed to guide policy, planning or practice decisions in social welfare. When we say that social work research sets out to solve practical problems in

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social welfare and to focus on evidence-based practice, the connotation of an applied research focus is inescapable.

The paradigm shift suggested here can be conceptualised as building scientific foundations for the caring professions by identifying generalisations from the daily practical experiences of these professionals, and then systematising such generalisations as scientific hypotheses. These hypotheses should then be validated by research procedures until they qualify as propositions. Such propositions in turn need to be moulded into models, and eventually theories, that not only guide daily practice but ultimately move the caring professions closer to the true professions. Only thus will a better-quality service become available to the clientele of the caring professions: learners, patients and individuals, families, communities and even societies in need of social development.

7. UNDERSTANDING THE RELATIONSHIP BETWEEN SCIENTIFIC THEORY AND PROFESSIONAL RESEARCH

The first insight of importance is that a scientific theory is a conceptual framework – that is it is one of the three basic frameworks which make up the "structure" of science: typologies, models and theories. This implies that a theory can also classify (like a typology), discover or expose relationships between concepts (like a model). Essentially, however, a theory explains a phenomenon in a science or a profession by explaining the relationships between the concepts – or the relationships between the attributes of the concepts or constructs used in the theory – and it predicts how these attributes will behave in the future under certain circumstances.

The purpose of professional research is not only the solving of practical problems applicable to a specific practice setting, but also the forging of a genuinely indigenous theoretical base for the particular profession. As mentioned in Chapter 1, the professions in a Western or Westernised society are based on scientific knowledge. Scientific knowledge consists of typologies, models and theories developed by researchers. In the caring professions research has often focused exclusively on efforts to solve practical problems in the daily conduct of the profession in the classroom, the hospital and the public or private welfare agency. This has served practical purposes, but not necessarily the advancement of the relevant profession in the hierarchy of professions – which not only affects the remuneration package the professional can reasonably expect, but also the quality of the service the learner, patient or client can expect to receive. The process of creating scientific theory while conducting professional research is described in detail in Chapter 3 of this book.

On a practical level, we suggest that the educational, health care and welfare systems should be encouraged to fund research efforts geared to the development of scientific theory in a profession in order to enable schools, hospitals and agencies to build a system of conducting such research into their daily practice. That may mean that competent researchers trained to meet this kind of challenge should be allocated to certain clusters of schools, hospitals and welfare agencies with the portfolio to plan and monitor the execution of such research projects. Concomitantly, grassroots members of the caring professions should be socialised to internalise a basic research-mindedness that will compel them to keep a record of occurrences during daily practice situations from which and about which generalisations can be

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SECTION A

extracted. In addition, a further incentive in the form of remuneration rewards should be made available. A system of programme evaluation that will monitor the results of such a research programme (discussed in section E, Chapter 27 of this book) will ensure that the investment is well worth the effort.

In order to build scientific knowledge, a profession needs a research infrastructure that includes a cadre of researchers, a domain for their activities, organisational structures to enable them to communicate with one another, a means of providing them with specialised training, auspices to enable them to conduct research, and sources of funds for their efforts (Kirk & Reid 2002: 50).

SUMMARY

This chapter intends to acquaint readers with the terms *scientific theory* and *professional research*, and present some tentative thoughts on the relationship between them.

Scientific theory is described as a conceptual framework within the structure of science. Such a framework is built from concepts or constructs, often of a variable nature, and is utilised in the formulation of basic statements (sentences). These statements may be definitions, propositions or hypotheses that are woven together with a view to classifying, describing and, in particular, explaining a human phenomenon.

Professional research is a scientific endeavour traditionally aimed at addressing problems that arise in the practice of a human service profession. In this chapter, however, we advocate the extension of professional research to the development of scientific theory indigenous to that profession, and able to inform the profession on a more advanced level than formerly. It is assumed that such development within a profession must result in better service to its clientele.

Self-evaluation and group discussion

- Have you come across any typology (or taxonomy) in any subject you have studied? If not, search for such a typology (or taxonomy) and test it against the criteria for a classification scheme. Is there any difference between a typology and a taxonomy? If your answer is yes, what is the difference?
- If you have chosen a favourite social science, which social science is it? Have you come across any social-scientific model in that science that you find fascinating? Describe the model to your group.

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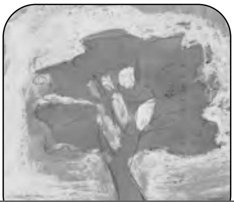

3

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Professional research and professional practice

Learning objectives

Studying this chapter should enable the reader to

- gain an understanding of the concepts of professional research and professional practice
- become acquainted with the process of forming practice generalisations, which underlie the total process of building a scientific basis for a profession
- acquire a perspective on the scientific-practitioner model
- acquire a broad perspective on evidence-based practice.

1. INTRODUCTION

It is crucially important to read chapters 1 and 2 of this book as a theoretical frame of reference in order to understand the relationship between professional practice and professional research.

In Chapter 2 a paradigm shift from practical problem-solving research only towards social scientific research in the caring professions is proposed. The paradigm shift suggested here can be conceptualised as building scientific foundations for the caring professions by identifying generalisations from the daily practical experiences of these professionals, and then systematising, codifying and validating such generalisations until they qualify as scientific propositions. These propositions then need to be moulded into theories that are not only able to guide daily practice but may also eventually lead to a closing of the gap between caring professions and the true professions. In this way an improved quality of service may become available to the clientele of the caring professions: learners, patients and individuals, families, communities and even societies in need of social development.

However, a social scientific endeavour in the caring professions should not replace the practical problem-solving research at classroom, hospital or agency level

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SECTION A

that has in the past been the only norm for good professional research. The latter type of professional research is unlikely to become outdated and will always be of crucial importance. What we plead for is a greater balance between applied and basic research – in other words focusing not only on practical problem-solving research but also on theory-building research. Both are essential and need not be mutually exclusive. Basic research focuses on refuting or supporting theories that explain how the social world operates, what makes things happen, why social relations are a certain way, and why society changes. Basic research provides a foundation for knowledge and understanding that is generalisable to many policy areas and social problem situations. Basic research is the source of most of the tools – methods, theories and ideas – that applied researchers and practitioners use (Neuman 2006: 24).

In the context of the above, this chapter will examine the relevant concepts, namely professional research and professional practice, the process of forming practice generalisations which underlie the total process of building a scientific basis for a profession, as well as the scientist-practitioner model and evidence-based practice approach.

2. DEFINITIONS

2.1 Professional research

Different authors stress the differentiation of professional research from social scientific research. Neuman (2006: 2), for instance, defines social scientific research as "a collection of methods and methodologies that researchers apply systematically to produce scientifically based knowledge about the social world", while Rubin and Babbie (2001: 6), for example, describe the distinctive character of social work research as follows: "Social work research seeks to accomplish the same humanistic goals as social work practice; and like practice, social work research is a compassionate, problem solving, and practical endeavor." Problem solving is thus stressed here within the context of a human service profession – in this case social work. As was mentioned above, a paradigm shift is called for, that is, moving away from mere problem-solving research to building, in addition, a theoretical knowledge base for a profession. With this in mind, Grinnell's (1993a: 4) definition may be more appropriate: "Social work research [professional research] is a scientific inquiry about a social work problem [professional problem] that provides an answer contributing to an increase in the body of generalisable knowledge about social work [professional concerns]."

In discussing professional research, we intend scientific knowledge development to be viewed within a professional context, which ensures that the research process becomes, as Bloom (1997: 190) puts it, a "knowledge-building enterprise".

2.2 Professional practice

The concept of a profession and the criteria a profession is expected to meet were discussed comprehensively in Chapter 1. For the purposes of this discussion, the definition in *Webster's comprehensive dictionary* (1998: 1006) is accepted: "An occu-

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pation that properly involves a liberal education or its equivalent, and mental rather than manual labour."

The term *professional practice* denotes the practice situation – or the performance of a professional practitioner. The salient feature of such a professional practice situation is that it should be based on a scientific knowledge base. This aspect was stressed as long ago as 1915 by Flexner, quoted as follows by Hudson and Nurius (1994: 44): "Professional practice must be based upon a systematic body of knowledge and theory."

It is clear from this conceptual framework that if we want to develop scientific knowledge through the generation of professional research based on professional practical experiences, then it is imperative that attention be devoted to the process of forming practice generalisations, which underlie the total process of building a scientific basis for a profession.

3. KNOWLEDGE BUILDING: THE PROCESS OF FORMULATING, VALIDATING AND CODIFYING PRACTICE GENERALISATIONS

To develop a solid indigenous theoretical knowledge base for the caring professions, the "ideal-typical" procedure of a research-minded professional practitioner will consist of routinely formulating scientific descriptions of salient practice phenomena as they occur in daily practice, with special reference to successes and failures (i.e. practice evaluations), from which practice generalisations will emerge. Generalisation, according to Lang (in Sherman & Reid 1994: 269), "is a process in which abstracted features and characteristics that are similar are identified and linked or recognized tentatively as having connections". These generalisations will then be systematised, that is, arranged in the order that is the most logical or practical in the particular circumstances, utilising any one or more of the data-analytical methods available.

Ideally, they should then be validated by means of selected research procedures as described in this and other social science methodology textbooks. Validation thus involves the testing of these generalisations that will have to be defined (if not already adequately formulated) and then transformed into researchable hypotheses. Validated hypotheses are then converted into propositions that, fitted together, will contain the following:

- The concepts selected as indispensable for a practice model in the particular field under review
- The relationships seeming to emerge between these selected concepts

Thus a prototypical model of practice in this particular field will have been formulated.

With further scientific thought and testing of the prototypical model, a theory or theories explaining and predicting the underlying practice phenomena should emerge, and thus an embryonic scientific basis for the relevant cut, or section, of practice will have been laid.

A code is defined by Webster (1961: 437) as "any written collection of laws; any set of traditional rules of conduct that are considered morally binding upon the indi-

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vidual as a member of a particular group; a set of rules for or standards of professional practices". Codification thus involves further systematisation of validated practice models and theories into rules and procedures now mutually recognised by members of the profession and laid down in relevant official laws. Thus, finally, codification will have to follow when professional practitioners are satisfied that the practice model or models that have been developed have been adequately tested, and the underlying theory or theories explaining the nature and predicting the behaviour of the phenomena involved, adequately validated.

It is essential, in order to understand the process of forming practice generalisations, to devote attention to the following modes of reasoning: deductive, inductive and diagnostic reasoning. The discussion that follows of the three modes of reasoning and the practical illustration thereof is primarily based on De Vos (1998; 2002; 2005) and the classic work of Lehrman (1954).

3.1 Deductive reasoning

Deductive reasoning, or deduction, moves from the general to the specific. It moves from a pattern that might be logically or theoretically expected to observations that test whether the expected pattern actually occurs. Babbie (2007: 46) describes this process as follows: "From a general theoretical understanding, the researcher derives (deduces) an expectation and finally a testable hypothesis." According to Neuman (2006: 59), it means that to theorise in a deductive direction, the researcher begins with abstract concepts or a theoretical proposition that outlines the logical connection among concepts and then moves toward concrete empirical evidence.

Deduction is a form of reasoning where two premises are relevant. Premises are statements or assumptions that are self-evident and widely accepted "truths" (Leedy & Ormrod 2005: 31). The first premise states the case and the second states the generalisation of which the case is one example. Subsequently, the deductive conclusion is drawn logically, appearing almost self-evident. The process is called a *syllogism* and the classical form is usually presented as follows:

- First premise (the case): *Socrates is a human being.*
- Second premise (the generalisation of which the case is an example): *Humans are mortal.*
- Deductive conclusion (following logically, is self-evident, adding no new knowledge): *Therefore Socrates is mortal.*

If the case is not mentioned, the reasoning in deduction will be incomplete and it will not be possible to draw the conclusion. However, as soon as both premises have been stated, the deductive conclusion is inevitable. It is, in fact, built into the premises, which is why it is said that deduction does not add any new knowledge. Although deduction cannot be viewed as a "creative" reasoning mode, it nevertheless plays a crucial role in all our scientific and professional thought.

It is also important to remember that quantitative researchers use a deductive form of reasoning and will thus begin with hypotheses or abstract generalisations and move towards proving these.

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3.2 Inductive reasoning

Babbie (2007: 49) states that inductive reasoning, or induction, moves from the particular to the general, from concrete observations to a general theoretical explanation. Inductive reasoning begins not with a pre-established truth or assumption, but with an observation. Adding to this, Leedy and Ormrod (2005: 32) state that in inductive reasoning people use specific instances or occurrences to draw conclusions about entire classes of objects or events. In other words, they observe a sample and then draw conclusions about the population from which the sample comes. To theorise in an inductive direction thus means the researcher begins with observing the empirical world and then reflects on what is taking place, thinking in increasingly more abstract ways, moving toward theoretical concepts and propositions (Neuman 2006: 60). In other words, with inductive theorising or reasoning the researcher begins with a general topic and some vague ideas that he or she then refines and elaborates into more exact theoretical concepts.

In the case of induction there are also two premises under review: the case and the characteristic of the case. The conclusion is a tentative generalisation. The typical inductive syllogism looks like this:

- First premise (the case): *Socrates is a human being.*
- Second premise (one of the characteristics of the case): *Socrates is mortal.*
- Inductive conclusion (tentative generalisation, a possibility presenting itself in the light of the above characteristic): *Therefore, there is a possibility that humans are mortal.*

One of the differences between deduction and induction is that in the case of induction, a new thought is added which is not necessarily contained in the premise. Induction is thus a creative reasoning mode by which the scientific knowledge base can be added to. In the case of induction the conclusion is also not, as in the case of deduction, completely certain or sure, but only tentative or possible. The basic reason why it is still only tentative or possible is because Socrates is only one case, while many more cases will have to be tested before we can begin thinking that humans are mortal. Thus more cases have to be tested:

- First premise: *Plato is a human being.*
- Second premise: *Plato is mortal.*
- Inductive conclusion: *There is now a greater possibility that humans are mortal.*

But the scientist is not satisfied yet. He continues to test more cases:

- First premise: *Aristotle is a human being.*
- Second premise: *Aristotle is mortal.*
- Inductive conclusion: *There is now an even greater possibility that humans are mortal.*

From at least six millennia of human history of which we have fairly valid knowledge, and a world population of more than 7000 million at present, three cases are still very few. Thus we continue testing one historical figure after another: Julius

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Caesar, Caesar Augustus, Constantine the Great, Attila the Hun, Michelangelo, Napoleon, Queen Victoria, JC Smuts, Oliver Tambo, Govan Mbeki, etc. We are now relatively sure that all humans are mortal and our inductive scientific finding becomes all the more valid ... except that there may just be a possibility that someone may be immortal! This, then, is the essential difference between deduction and induction – our conclusion in the case of deduction is always 100 per cent sure if the two premises are proved to be correct, while this can never be the case with induction.

3.3 The diagnostic reasoning mode

This derivative of inductive reasoning, of crucial importance in the caring professions such as social work, nursing and psychology, was first introduced to the field of social work by Louis Lehrman in 1954. In an article entitled "The logic of diagnosis" Lehrman described deduction and induction along the lines we have indicated above. Quoting Ducasse as the only logistician recognising this derivative, Lehrman introduced what he called a "third form of mediating reasoning – the diagnostic reasoning mode", which derives from a characteristic and a generalisation leading, by way of conclusion, to tentative placement of the case in the class or group implied. The syllogism looks like this:

- First premise (one of the characteristics of the case): *Socrates is mortal*.
- Second premise (tentative generalisation, a possibility presenting itself in the light of extraneous knowledge about the class of objects to which the case may belong): *Humans are mortal*.
- Diagnostic conclusion: *Therefore there is a possibility that Socrates may be a human*.

We see here the diagnostic procedure so well known to the caring professions (e.g. this patient or client is an alcoholic, a case of meningitis, a sexually molested child).

Diagnosis, as induction, is a creative reasoning mode. The conclusion is not formally contained in the premises but, based on these premises as evidence, we reach beyond towards a designation of the class of objects to which the particular case may quite possibly belong, by testing the case against various (known) characteristics of that particular class of objects – in this case humans, and not dogs or butterflies. As in the case of induction, the conclusion is never certain, only probable, although its probability may be strengthened by testing the case against additional characteristics. Thus:

- First premise (additional characteristic of class of objects): *Socrates can speak*.
- Second premise (tentative generalisation, a possibility presenting itself in the light of our knowledge of humans): *Humans can speak*.
- Diagnostic conclusion: *There is thus a greater possibility that Socrates may be a human*.

We can continue strengthening our evidence by testing for as many additional characteristics as we deem fit, for example that humans have two legs, are introspective, can laugh, can do mathematics, and so forth.

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An additional way of strengthening a diagnosis is by exclusion, e.g. testing for characteristics not akin to humans, such as having four legs, a tail, wings, barking, neighing and screeching. An entity possessing such characteristics may be named Socrates, but is not related to the original human being. De Vos (1973: 168–170) states that if we closely study the diagnostic reasoning process illustrated above we will note three features, which are of great importance for the development of the scientific basis of a profession.

UNDERLYING BODY OF KNOWLEDGE

The utilisation of the diagnostic reasoning mode presupposes an underlying body of knowledge, as has been suggested by many authors. We see this clearly illustrated in the following: we cannot "diagnose" Socrates as a "human being" without having basic knowledge of the characteristics of Socrates and the characteristics of humans. This fact is clearly illustrated when Lehrman (1954) describes the construction of "diagnostic chains". Three characteristics of Socrates are tested: that he was mortal, that he had the power of speech and that he was introspective. The reasoner must, however, also use his knowledge of humans: only because he also knew that humans are mortal, have the power of speech and are introspective, was it possible to draw the inference that Socrates was probably a human. When the author (Lehrman) applies this process directly to social work, as an example of the caring professions, we see the function of the underlying body of knowledge even more clearly: the reasoner can only come to the diagnostic conclusion that Mr Roe, for example, is probably psychiatrically normal, if he manipulates his knowledge of the characteristics of psychiatrically normal people and his knowledge of Mr Roe with the diagnostic reasoning mode. The indispensable necessity that the professional be equipped with an armour of thorough knowledge of the material with which he works is dramatically illustrated here.

ROLE OF DIAGNOSTIC CATEGORIES

The second observation we make is that Lehrman, without naming it thus, points out the role of diagnostic categories in the utilisation of the diagnostic reasoning mode. When the reasoner draws the diagnostic conclusion that Socrates was probably a human, he works with the case "Socrates", and the diagnostic category "human". Knowledge of the characteristics of the diagnostic category "human" and knowledge of the case "Socrates", manipulated by the diagnostic reasoning mode, has led, as we have seen, to the conclusion that the case can be diagnosed as possibly belonging to the category "human".

However, Lehrman points out that his conclusion is strengthened by our knowledge of the characteristics of other diagnostic categories, for example the category "horse" or the category "dog". Our knowledge of the characteristics of the case "Socrates", and our knowledge of the characteristics of the diagnostic category "horse", manipulated by the diagnostic reasoning mode, have led to the conclusion that the case "Socrates" cannot be diagnosed as possibly belonging to the category "horse". Lehrman calls it diagnosis by negative evidence or exclusion, but we may also see it as diagnosis by means of testing the case against different diagnostic categories.

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SECTION
A

We thus see that that which Lehrman calls *generalisation* points consistently in his examples to a category, and that which he calls *a particular* points to a characteristic of a category.

The crucial question to address now is how generalisations are formed in practice. Incredible as it may sound, the first clear description of how generalisations are formed in practice comes from a social worker of the 1920s (Sheffield 1922). Ada Sheffield writes as follows, painting, in today's terms, a rather amusing picture of social work at the beginning of the 1900s (the term "prostitute" is retained as it was the terminology of Ms Sheffield's time):

> She relates that a keen and experienced worker was called in consultation on the problem of a widow with two children who had been receiving an allowance for some years. The woman had steadily declined to move from an unsanitary and inconvenient tenement, giving one reason and then another for not availing herself of better quarters that were found for her, or of moving expenses that were promised. The consultant worker urged that careful inquiry be made into the woman's character. She remarked that in all her long experience she had never known an instance in which the explanation of a woman's apparently unaccountable obstinacy in holding on to an undesirable dwelling place had not finally come to light as being something discreditable in her mode of life. At the same time she recognised at least two other explanations as being possible: one the home sentiment, the other inertia. ... Immoral conduct, home sentiment, inertia are all then possible "larger ideas" or "concepts" in relation to which the bare fact of this woman's not moving may take on significance. Now the "significance" which each of these concepts gives consists in the linking of this fact to other facts or ideas which are thereby brought under view. For instance, the concept "immoral conduct" links the widow's declining to move with a doubt which existed as to the legitimacy of her youngest child, and with a certain indefiniteness as to how she supplemented her allowance. If her obstinacy pointed to such wrong-doing, it connected itself in thought with these possibilities and with others, such as her state of health. On the other hand, if it indicated home sentiment, it implied emotional stability, a domestic trait, and perhaps a sense of solidarity with the neighbourhood.

Sheffield's example is, firstly, an illustration of induction. From her experience with a great many cases this social worker (possibly Sheffield herself) drew the inference that, if a woman holds onto an undesirable dwelling with seemingly unaccountable obstinacy, then she is a prostitute. The question then arose: Is Mrs Z a prostitute because she is holding onto an undesirable dwelling with apparently unaccountable obstinacy? This inference could be drawn if Mrs Z also complied with other characteristics of the diagnostic category "prostitute". Other characteristics of prostitutes are (according to Sheffield's "framework for assessment") as follows:

- Prostitutes sometimes have illegitimate children.
- Prostitutes draw income from their activities.
- Prostitutes sometimes suffer from venereal disease (more probably HIV infection in today's terms).

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The legitimacy of Mrs Z's youngest child had been questioned before. Mrs Z supplemented her allowance in a manner about which there was uncertainty. Mrs Z possibly also suffered from ill health, although this is not clearly stated. Mrs Z now already possesses four characteristics of a prostitute, if we include the original refusal to move. From this it becomes all the more probable that Mrs Z could be "diagnosed" as a "prostitute".

But since social diagnosis requires the utmost caution, it is also necessary to establish other possible explanations for Mrs Z's behaviour: home sentiment, which would imply emotional stability: a domestic characteristic, and possibly a feeling of solidarity with the neighbourhood. Inertia or laziness could also be an explanation for Mrs Z's behaviour, and this possibility must also be investigated. If this train of thought were to direct further investigation, the social worker could well come to a totally different diagnosis.

Thus, we see that Sheffield (1922) used three diagnostic categories:

- "Prostitute"
- "Woman with emotional stability and a sense of solidarity with the neighbourhood"
- "Lazy woman"

Mrs Z was tested against all three of these categories in order to ascertain which one she belonged to. In her performance of this test the social worker used her underlying knowledge of the characteristics of the woman and of the characteristics of the categories in the diagnostic reasoning manner.

SYNTHESIS OF INDUCTION, DEDUCTION AND DIAGNOSIS

The third observation we make is the exciting possibilities which the conscious synthesis of induction, deduction and diagnosis (the construction of what Lehrman calls reasoning "chains") has for the development of the scientific basis of a profession. The case quoted by Sheffield (1922) illustrates such a chain as follows:

- **Observation and induction**

  Mrs A is a prostitute.

  Mrs A clings with apparently unaccountable obstinacy to undesirable housing.

  There is, therefore, a probability that prostitutes are inclined to cling with obstinacy to undesirable housing.

  Mrs B is a prostitute.

  Mrs B clings with apparently unaccountable obstinacy to undesirable housing.

  There is, therefore, a greater possibility that prostitutes are inclined to cling to undesirable housing.

  Mrs C is a prostitute.

  Mrs C clings with apparently unaccountable obstinacy to undesirable housing.

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SECTION
A

There is, therefore, a still higher probability that prostitutes are inclined to cling to undesirable housing.

After Sheffield had observed the same phenomenon with Mrs D, E, F, G, and so on, about 25 times in all, she came to the inductive conclusion that it is probably a characteristic of prostitutes to cling to undesirable housing. This now becomes a tentative practice generalisation, which could only be formulated because the social worker was research minded or perhaps merely a keen observer. Perhaps she had noted more such phenomena during her daily practice.

- **Diagnosis**

  The tentative inductive generalisation quoted above led to the following process when Sheffield met Mrs Z:

  Mrs Z is inclined to cling with apparently unaccountable obstinacy to undesirable housing.

  Prostitutes are inclined to cling to undesirable housing (generalisation gleaned from practice).

  There is, therefore, a probability that Mrs Z is a prostitute.

However, as this evidence is far from sufficient to satisfy a research-minded practitioner, further testing against other diagnostic categories by means of the deductive reasoning process is necessary. (Note, however, that the probabilities involved below are those germane to the inductive and diagnostic reasoning modes, and not to any flaw in the deductive reasoning mode.)

- **Deduction**

  Mrs Z is (probably) a prostitute.

  Prostitutes earn money with their activities.

  Therefore Mrs Z should earn money with her activities.

- **Diagnosis**

  Mrs Z supplements her allowance in a secret manner.

  Prostitutes earn money with their activities.

  It is now more probable that Mrs Z is a prostitute.

- **Deduction**

  Mrs Z is (probably) a prostitute.

  Prostitutes (sometimes) have venereal disease.

  There is, therefore, a probability that Mrs Z may have venereal disease.

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Thus, we have come full circle in that yet another diagnostic-deductive chain has been developed according to Lehrman's suggestion, and this case can be added to Sheffield's inductive chain:

- Mrs Z is a prostitute.
- Mrs Z clings with obstinacy to undesirable housing.
- It is now highly probable that prostitutes are inclined to cling with obstinacy to undesirable housing.

In the same way, research-minded professional practitioners can, through these reasoning modes, formulate practice generalisations with the aim of building a theoretical knowledge base for the caring professions. To be successful in this process it is, however, necessary that the professional practitioner must already have, or must develop, a scientific attitude.

4. SCIENTIST-PRACTITIONER APPROACH

The influence of science on direct professional practice has taken two forms. One is *making practice itself more like research* (cf. Kirk & Reid 2002) from which attempt emerged, among others, the scientist-practitioner approach. The other is *using the results of scientific inquiry in the work with clients*, that is the utilisation of research results in practice, which eventually culminated in what is even named a "new paradigm", namely evidence-based practice. According to Kirk and Reid (2002: 151), evidence-based practice is an essential part of scientific practice, but can be used without other components of scientific practice such as the use of single-system designs. Both these forms of influence of science on direct professional practice are discussed below.

Over the past 40 to 50 years there have been many attempts to strengthen the scientific basis of the professional practice of the caring professions. These attempts included efforts to design and evaluate practice interventions; to improve research training; to sharpen the critical thinking abilities of practitioners; to increase the collaboration of researchers and practitioners; and to encourage the dissemination and use of research findings by practitioners.

From these attempts the so-called "scientist-practitioner" approach developed. According to Heppner, Kivlighan and Wampold (1992: 15), the scientist-practitioner model goes back to 1949 and 1950, when the first national conferences for the training of clinical and counselling psychologists were held in Boulder, Colorado, and Ann Arbor, Michigan, respectively. The creators of the model stressed the philosophy that students needed to be trained to do research as well as to learn the skills of the practitioner. Since then many other professions have elaborated on the model.

At the heart of the scientist-practitioner model is the controversial claim that research and practice could and should be merged (Wakefield & Kirk 1996: 83). The authors quote Briar (1980: 35), one of the approach's earliest proponents, as saying that the concept *scientist-practitioner* "means not only that the same person can both practice and conduct research, but also that he or she can engage in practice and research simultaneously as a set of integrated activities. This concept makes possible an empirically based model of practice". This quote conveys the core idea of the scientist-practitioner model, namely that the use of research methods should not be restricted to a special group of academic researchers but should be implemented by all professional practitioners as a routine approach to performing and evaluating professional services. From the beginning, the goal of the scientist-prac-

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titioner model was to stimulate research mindedness and critical thinking among professional practitioners, to integrate practice and research, and to increase professional accountability at the micro- and macro-levels. Later (cf. Fortune & Reid 1999: 14) the idea was added that the scientist-practitioner should also be able to add to the basic knowledge base of the social work profession.

The reality, however, is that no great success has as yet been achieved in combining a professional practitioner's role (to help clients) with a researcher's role (to produce new knowledge). As Rosen (1996: 106) states, "[t]he conception of the scientific practitioner has failed so far to make the desired inroads into the realm of daily practice". Different authors mention different reasons hindering successful implementation of the scientific-practitioner model. Three of the most important practical reasons are, first, the conflicting objectives between scientific research and practice – most practitioners want to help people and not conceptualise, generalise, quantify or analyse during daily practice; second, the argument that rigorous evaluation is time consuming; and finally that agencies are not reimbursed for time spent on scientific inquiry or knowledge development – practitioners often engage in these activities in their own time and with little administrative or collegial support (Epstein 1996; Rosen 1996; Hudson & Nurius 1994).

Whatever the practical situation may be, we agree with Dangel (in Hudson & Nurius 1994: 86) that "practitioners should be critical partners in the development of scientific knowledge. Their practical experience, their close proximity to the data, and their professional commitment to effective practice make them second to none in the importance of their contributions". They are in the ideal situation to become scientific knowledge developers.

The challenge is to overcome the practical obstacles mentioned above that impede the implementation of the scientific-practitioner model and to motivate the practitioner to assume the role of knowledge developer. Lang (in Sherman & Reid 1994: 271) comments as follows on the paradigm shift being called for:

> If a dual purpose can be established for practitioners, giving "knowing" equal importance with "doing", and if a pattern for managing both activities concurrently can be established, then the social work practitioner will be able to incorporate a knowledge-developing dimension into the processing of practice data.

The gist of this dual approach is based on the fact that practitioners are inclined to use existing theory to interpret data with a view to appropriate intervention. Instead of being only action oriented, the practitioner should be motivated and trained to be attuned to linking data to previous data, in the effort to derive actions that proved serviceable in prior instances of comparable practice. The matching of data may stimulate inquiry and promote an abstraction and generalising process, which puts the practitioner into a deliberate knowledge-building mode. Thus, instead of continuously linking existing theory with data generated during practice, such data should rather be linked with similar data from the practitioner's experience in order to allow the emerging of generalisations, as described above. "Knowing" and "doing" are then practised simultaneously and viewed as equally important. Such a dualistic approach to integrating both knowledge development and intervention should stimulate a new era of theory development.

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If the practitioner were able to cultivate this practice-based knowledge development attitude, the similarity between the problem-solving process in practice and research would become understood, accepted and internalised as part of the scientific-practitioner model. A number of authors have described this analogy in detail (Powers et al. 1985; Monette, Sullivan & DeJong 2002; Yegidis & Weinbach 1996). Therefore, we shall not comment further on this aspect.

Flowing from and linking with the scientific-practitioner paradigm to enhance and strengthen the scientific basis of the professional practice of the caring professions is the so-called evidence-based practice movement which has evolved over the past 15 to 20 years. The next section will briefly discuss this approach to stimulate professional practice and theoretical knowledge building.

5. EVIDENCE-BASED PRACTICE

Evidence-based practice as a new paradigm has generated not only great enthusiasm in many areas of the human service professions but also an intense debate about the transferability of the principles of evidence-based practice from medicine to disciplines that operate amid particularly complex and multifaceted societal factors (Morago 2006: 461). This new paradigm has initially developed in the areas of medicine and health care but has rapidly expanded to other social and human service professions. It is designed to promote the consistent use of scientifically validated information and effective interventions in the caring professions. According to Edmond et al. (2006: 377), evidence-based practice may be thought of as a process undertaken by professionals wherein the scientific status of potential interventions is investigated and a thorough explication of the results is shared with clients, so that practitioner and client together can select the most appropriate steps for addressing a specific problem. By utilising evidence-based practice, professionals in practice are exposed to a research milieu where they might be stimulated to contribute to theoretical knowledge building.

The ethical foundation for evidence-based practice is found in the code of ethics of all the helping professions. Sundet and Kelly (2007: 164) refer, for instance, to the relevant statements from the National Association of Social Workers (NASW) Code of Ethics (1999), namely: "Social workers should base practice on recognized knowledge, including empirically based knowledge relevant to social work and social work ethics" (Code 4.01) and "Social workers should critically examine and keep current with emerging knowledge relevant to social work and use evaluation and research evidence in their professional practice" (Code 5.02). These statements emphasise the responsibility of professionals to employ empirical knowledge in practice and to contribute to the advancement of professional knowledge through research. However, for professionals to adopt this paradigm as part of their professional frame of reference, it is important to understand the meaning of evidence-based practice and how to implement it.

5.1 Definition of evidence-based practice

An examination of the literature suggests that there are multiple definitions of evidence-based practice as well as a variety of terms that are somewhat loosely used

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interchangeably. Kirk and Reid (2002: 151), for example, state that it refers broadly to practice that is informed by the results of available empirical research, that is research conducted to build general knowledge or practice methods, in contrast to research specific to the case at hand.

According to Morago (2006: 462), the first definition of evidence-based practice to become widely accepted in medicine was originally provided by Sackett and colleagues (1996), namely: "Evidence-based practice is the conscientious, explicit and judicious use of current evidence in making decisions about the care of individuals." Thereafter, this definition was adapted in order to describe a process designed to forward effective use of professional judgement in integrating information regarding each client's unique characteristics and circumstances, including their preferences and actions, and external research findings. Against this background Sundet and Kelly (2007: 165) give the following operational definition:

> Evidence-based practice is a type of intervention in which the professional uses research as a practice and problem solving tool; collects data systematically to monitor intervention; specifies problems, techniques and outcomes in measurable terms; and systematically evaluates the effectiveness of the intervention used.

The goal is to use the best evidence to guide interventions that will benefit the client, enhance the quality and outcomes of care, and be cost effective.

In the context of the caring and human service professions, Plath (2006: 58) mentions that Sackett et al. (1997) define evidence-based practice for social work as follows: "Evidence-based practice is the conscientious, explicit and judicious use of current best evidence in making decisions regarding the welfare or care of individuals, service-users, clients and/or carers." In this regard Edmond et al. (2006: 384) explain that *conscientious* includes both consistently applying evidence and continuing to learn as new evidence becomes available, while *judicious* includes balancing client characteristics, preferences and life circumstances against relevant research/practice guidelines (expert consensus, research-based treatment recommendations). Informed decision making by the practitioner is central to this definition and explanation of evidence-based practice. Therefore, Macdonald (2001), as cited by Plath (2006: 58), states that "[e]vidence-based practice indicates an approach to decision-making which is transparent, accountable and based on a careful consideration of the most compelling evidence we have about the effects of particular interventions on the welfare of individuals, groups and communities".

In conclusion we can content ourselves with the meaning of evidence-based practice as described in the *Social work dictionar*y (Barker 2003: 189) namely:

> Evidence-based practice is the use of the best available scientific knowledge derived from randomised controlled outcome studies and meta-analysis of existing outcome studies as one basis for guiding professional interventions and effective therapies, combined with professional ethical standards, clinical judgement and practice wisdom.

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Scheyett (2006: 20) notes that when engaging in evidence-based practice, professionals move from an authority-based model of practice to one based in the best

available evidence gleaned from a critical examination of the literature. Resources for identifying the best practice evidence are available through organisations that produce and disseminate systematic reviews of interventions. She further suggests that professionals should compile and synthesise the best practice literature found in these reviews and protocols, and should also engage in critical reading of empirically based research articles which are available to help professionals identify evidence-based practices.

5.2 Process of evidence-based practice

In order to implement evidence-based practice effectively, professionals need to know that the process of evidence-based practice involves several steps. Some authors (e.g. Edmond et al. 2006: 384; Gossett & Weinman 2007: 147–149) divide the process into four steps while Morago (2006: 462) identifies five steps. Here we integrate these authors' descriptions of the different steps with a brief description of each one.

- Step 1: *Formulate focused and answerable questions, based on services users' needs.* Questions that lend themselves to searching for the best evidence must be specific enough to generate an answer in an electronic search by designating the client population or problem, identifying the intervention or area of interest, identifying a comparison intervention or status if applicable and designating measurable outcomes (Gossett & Weinman 2007: 147).
- Step 2: *Search the literature for the best research-derived evidence in order to address the question previously framed.* This step requires technological access to bibliographic databases and the skills to search these databases efficiently and thoroughly. Numerous evidence-based practice databases provide high-quality systematic reviews of research.
- Step 3: *Critically appraise the identified evidence for validity and relevance.* To critically evaluate the evidence, Gossett and Weinman (2007: 148) recommend that professionals use standardised or self-developed rating forms or evidence-based guidelines, which are rigorously designed recommendations for practice by a panel of experts.
- Step 4: *Apply the evidence to practice and policy decisions, integrating the findings with professional expertise and the service user's values and preferences.* An important feature of evidence-based practice is client involvement as informed participants in the decision-making process, which is achieved by considering individual client differences with available research, personalising evidence to specific clients, and encouraging client involvement in developing critical appraisal skills. Evidence-based practice thus combines empirical evidence, professional expertise and client choice in the practice process.
- Step 5: *Evaluate effectiveness and efficiency through planned review against agreed success criteria and seek ways to improve them in the future.* In the last step of the process the professional should thus evaluate the effectiveness and success of the outcome and then report the evidence to the client.

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SECTION
A

Overall, evidence-based practice reflects a real advance in terms of helping people and societies, and is highly congruent with the goals and values underlying social and human service professions. It further fosters a climate of critical analysis, reflection and inquiry within the caring professions, with the aim of improving the quality of professional practice. Finally, there is an impetus in evidence-based practice for practitioners and researchers to work together to establish research priorities, develop appropriate methodologies and produce useful and relevant research findings. This trend towards increased scientist–practitioner alliances has thus the potential to enhance the knowledge base of social and human service professions. However, we should remember that evidence-based practice per se is not science; it does not provide explanations of phenomena. It enhances professional practice but it has only marginally the potential to contribute to the development of theory, as discussed earlier in this chapter.

SUMMARY

In an attempt to strengthen and stress the particular relationship between professional research and professional practice, a paradigm shift is called for in this chapter, requiring practitioners not only to conduct problem-solving research, but also to build scientific theories from practice by routinely being aware of practice situations that lend themselves to the formulation of practice generalisations that could eventually become the propositions of a theory. In order to accomplish this, the process of transforming observed practice phenomena into testable scientific hypotheses is discussed in some detail as well as the fact that professional practitioners should internalise and apply a more scientific and evidence-based practice model.

Self-evaluation and group discussion

If you are a student studying to enter one of the caring professions, either select a case study from your practical placement or imagine such a case study. Do the following exercise:

- Extract at least two practice generalisations from your case.
- Explain to your group the reasoning that led you to the conclusion that these are practice generalisations.
- Use your case study to explain to your group how you would implement evidence-based practice to improve the quality of your professional service.

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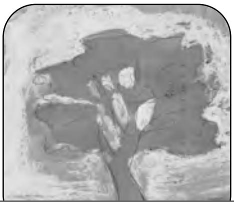

4

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Introduction to the research process

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with the two well-known and recognised approaches to research, namely the qualitative and quantitative paradigms
- gain an understanding of a practical model of the process of research in the caring professions when working from both a quantitative and a qualitative perspective.

1. INTRODUCTION

Science as a method of inquiry is, according to Babbie (2007: 1), "a way of learning and knowing things about the world around us" or, as stated by Heppner, Kivlighan and Wampold (1992: 80), "to advance knowledge, to make discoveries, and to acquire facts". Irrespective of what you want to learn, or what you want to discover, or what facts you want to acquire, there is a process involved – a systematic process of scientific inquiry, or a standard sequence of steps to increase our understanding of the world around us.

A classic example of this process of scientific inquiry is Leedy's (1993: 8–9) description of the discovery of how to make a fire. An early experimenter discovered that if two sticks were vigorously rubbed together, they became warm. Aha! A brilliant idea exploded within the person's skull: There was fire in the stick. This was probably the first research hypothesis! Rub the sticks long enough and the sticks would smoke. Ultimately, the smoke would ignite, thus solving one of humanity's earliest problems. And the problem was resolved by research methodology, a term that simply means the way in which to solve problems – that is, the research process.

The steps in solving an unsolved problem are practically the same for the modern researcher, Leedy argues, as they were for our primeval ancestors. Thus:

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SECTION A

- In the beginning there was a problem: How can we kindle a fire?
- Then came the recognition that there were data relating to the problem: sticks rubbed together became warm. That was fact.
- Next there was a rationalisation and a guess – a hypothesis, we call it. Logical reasoning entered the process: The sticks are warm. Fire is warm. Therefore, fire is in the stick. Further data were collected to see whether the hypothesis should be supported or rejected.
- The sticks were rubbed against each other with increasing force and vigour. They began to smoke. That was another fact.
- These additional facts seemingly confirmed the hypothesis and were apparently leading to the problem being solved. Further rubbing caused the temperature to rise to the kindling point – and the smoke ignited. Fire!
- The problem was solved, and our ancestor's guess (hypothesis) proved to be correct.

The above is a detailed description of the modern research procedure or process with the following underlying principles:

- It originates with a question or problem.
- It ends with a conclusion.
- The entire process is based upon observable facts, called data.
- It is logical.
- It is orderly.
- It is guided by a reasonable guess (hypothesis).
- It confirms or rejects the reasonable guess (the hypothesis) on the basis of fact alone.
- It arrives at a conclusion on the basis of what the data, and only the data, dictate.
- The conclusion answers the research question or resolves the problem.

The process of research then, Leedy (1993: 9) argues, is largely circular in configuration: It begins with a problem, and it ends with that problem resolved. Leedy and Ormrod (2005: 6) recently elaborated on this cyclic model by saying that a neatly closed circle is deceptive:

> Research is rarely conclusive. In a truer sense the research cycle might be more accurately conceived of as a *helix,* or spiral, of research. In exploring an area, one comes across additional problems that need resolving, and so the process must begin anew. Research begets more research. To view research in this way is to invest it with a dynamic quality that is its true nature – a far cry from the conventional view, which sees research as a one-time act that is static, self-contained, an end in itself.

Although this statement is true, the bottom line in this discussion is that between the crude prehistoric attempts to resolve problems and the refinements of modern research methodology lies a long road of development – but the essentials regarding the research process, as we have seen, are the same. Therefore, we agree with Babbie and Mouton (2001: 72), who state that all empirical research conforms to a stan-

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dard logic which they call the "ProDEC" framework. According to Babbie and Mouton (2001: 72) "ProDEC refers to the four elements that are standard in all forms of empirical research: a research *problem* (Pro), research *design* (D), empirical *evidence* (E) and *conclusions* (C)".

In this chapter an introduction to the approaches to research will be followed by an examination of the research process from a quantitative approach, and subsequently from a qualitative perspective. From this detailed examination the reader will realise that the first five steps of the research process are common to both the quantitative and qualitative approaches. These steps will therefore be introduced as such. Thereafter, the steps that are unique to the quantitative and qualitative approaches respectively will receive attention.

2. AN INTRODUCTION TO THE APPROACHES TO RESEARCH

At present there are two well-known and recognised approaches to research, namely the qualitative and the quantitative paradigms. These two methodological paradigms differ incisively from each other. Prospective researchers should orient themselves to the differences between these approaches and decide which one is the better choice for their project, or whether a combined quantitative/qualitative approach, also known as the mixed methods approach (Alasuutari, Bickman & Brannen 2008: 15; Bergman 2008: 1), might be appropriate.

Each approach has its own purposes, methods of conducting the inquiry, strategies for collecting and analysing the data and criteria for judging quality.

Leedy and Ormrod (2005: 94–97) have identified the following characteristics of the quantitative approach:

- It is used to answer questions about relationships among measured variables with the purpose of explaining, predicting and controlling phenomena. The intent is to establish, confirm or validate relationships and to develop generalisations.
- Structured guidelines exist for conducting quantitative research. Concepts, variables, hypotheses and methods of measurement tend to be defined before the study begins and remain the same throughout. Quantitative researchers choose methods that allow them to objectively measure the variable(s) of interest and they also try to remain detached from the research participants so that they can draw unbiased conclusions.
- Quantitative researchers isolate the variables they want to study, control for extraneous variables, use a standardised procedure to collect some form of numerical data, and use statistical procedures to analyse and draw conclusions from the data.
- A quantitative study usually ends with confirmation or disconfirmation of the hypotheses that were tested.
- Quantitative researchers tend to rely more heavily on deductive reasoning (moving from the general to the specific), beginning with certain premises (e.g. hypotheses, theories) and then drawing logical conclusions from them.

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SECTION A

According to Kumar (2005: 12), the following can be added with regard to the quantitative approach:

- It is classified as the structured approach because everything that forms the research process – objectives, design, sample and measuring instruments – is predetermined.
- As a structured approach it is more appropriate for determining the extent of a problem, issue or phenomenon.
- A study is classified as a quantitative study if you want to quantify the variation in a phenomenon, situation, problem or issue; if information is gathered using predominantly quantitative variables; and if the analysis is geared to ascertain the magnitude of the variation.

According to Ivankova, Creswell and Plano Clark (2007: 255), the goal of quantitative research is to describe the trends or explain the relationship between variables. The researcher asks specific, narrow research questions or formulates hypotheses about the variables that can be observed or measured. The sample size is large and is ideally randomly selected from the larger population to be able to generalise the results to this population.

A quantitative study may therefore be defined as an inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers and analysed with statistical procedures in order to determine whether the predictive generalisations of the theory hold true (Creswell 1994: 1–2).

Leedy and Ormrod (2005: 94–97) put forward their view of qualitative research, as opposed to quantitative research, where:

- The qualitative approach is used to answer questions about the complex nature of phenomena, with the purpose of describing and understanding the phenomena from the participants' point of view. The qualitative researcher seeks thus a better understanding of complex situations. Their work is often exploratory in nature and they may use their observations to build theory from the ground up.
- Qualitative researchers often start with general research questions rather than specific hypotheses, collect an extensive amount of verbal data from a small number of participants, organise those data in some form that gives them coherence, and use verbal descriptions to portray the situation they have studied.
- The research process is more holistic and "emergent", with the specific focus, design, data-collection methods (e.g. interviews) and interpretations developing and possibly changing along the way. Researchers enter the setting with open minds, prepared to immerse themselves in the complexity of the situation and interact with their participants. Categories (variables) emerge from the data, leading to "context-bound" information, patterns and/or theories that explain the phenomenon under study. Data analysis is thus more subjective in nature.
- A qualitative study is more likely to end with tentative answers or hypotheses about what was observed. These tentative hypotheses may form the basis of future studies designed to test the proposed hypotheses.
- Qualitative researchers make considerable use of inductive reasoning (moving from the particular to the general): They make many specific observations and then draw inferences about larger and more general phenomena.

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Kumar (2005: 12) adds the following characteristics of the qualitative approach:

- The qualitative approach is classified as unstructured, because it allows flexibility in all the aspects of the research process.
- The unstructured approach is more appropriate to explore the nature of a problem, issue or phenomenon.
- A study is qualitative if the purpose of the study is primarily to describe a situation, phenomenon, problem or event; the information is gathered through the use of variables measured on nominal or ordinal levels; and if analysis is done to establish the variation in the situation, phenomenon or problem without quantifying it.

Creswell (2007: 37–39) identifies the following characteristics of qualitative research:

- Qualitative researchers tend to collect data in the field at the site where participants experience the issue or problem under study.
- Qualitative researchers as a key instrument collect data themselves through examining documents, observing behaviour and interviewing participants.
- Qualitative researchers gather multiple forms of data rather than rely on a single data source.
- In the entire qualitative research process, the researchers keep a focus on learning the meaning that the participants hold about the problem or issue, not the meaning that the researchers bring to the research or writers from the literature.
- Qualitative research is a form of inquiry in which researchers make an interpretation of what they see, hear and understand. The researchers' interpretation cannot be separated from their own background, history, context and prior understandings.
- Qualitative researchers try to develop a complex and holistic view of social phenomena.

According to McRoy (1995: 2009–2015), the qualitative paradigm stems from an antipositivistic, interpretative approach, is idiographic and thus holistic in nature, and aims mainly to understand social life and the meaning that people attach to everyday life. The qualitative research paradigm in its broadest sense refers to research that elicits participant accounts of meaning, experience or perceptions. It also produces descriptive data in the participant's own written or spoken words. It thus involves identifying the participant's beliefs and values that underlie the phenomena. The qualitative researcher is therefore concerned with describing and understanding *(verstehen)* rather than explaining or predicting human behaviour (Babbie & Mouton 2001: 53); naturalistic observation rather than controlled measurement; and the subjective exploration of reality from the perspective of an insider, as opposed to the outsider perspective that is predominant in the quantitative paradigm. As such, a qualitative study is concerned with non-statistical methods and small samples, often purposively selected.

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SECTION A

An understanding of what both approaches denote is often best achieved by comparing them in a table. Table 4.1 clearly illustrates the differences between qualitative and quantitative research.

Table 4.1 A comparison of the quantitative and qualitative approaches in social research

Quantitative approach	Qualitative approach
Epistemological roots in positivism	Epistemological roots in phenomenology
Purpose is testing predictive and cause–effect hypotheses about social reality	Purpose is constructing detailed descriptions of social reality
Methods utilise deductive logic	Methods utilise inductive logic
Suitable for a study of phenomena which are conceptually and theoretically well developed; seeks to control phenomena	Suitable for a study of a relatively unknown terrain; seeks to understand phenomena
Concepts are converted into operational definitions; results appear in numeric form and are eventually reported in statistical language	Participants' natural language is used in order to come to a genuine understanding of their world
The research design is standardised according to a fixed procedure and can be replicated	The research design is flexible and unique and evolves throughout the research process. There are no fixed steps that should be followed and design cannot be exactly replicated
Data are obtained systematically and in a standardised manner	Data sources are determined by information richness of settings; types of observation are modified to enrich understanding
The unit of analysis is variables which are atomistic (elements that form part of the whole)	The unit of analysis is holistic, concentrating on the relationships between elements, contexts, etc. The whole is always more than the sum

By making the distinction between quantitative and qualitative research, we do not mean to imply that these approaches are mutually exclusive – that a researcher must choose to use one or the other approach for a specific study. In fact, most authors agree that in real life human sciences researchers often need to combine elements of both approaches in what they call, as mentioned above, a mixed methods research approach (Alasuutari et al. 2008: 15; Bergman 2008: 1; Ivankova et al. 2007: 260; Kumar 2005: 13; Leedy & Ormrod 2005: 97; Monette et al. 2002: 92).

Mixed methods research builds on both quantitative and qualitative approaches. When using a mixed methods approach, the quantitative and qualitative methods complement each other and allow for a more complete and in-depth understanding and analysis of a complex research problem. Mixed methods research tends thus "to be used to represent the mixing of research methods that cross the quantitative–qualitative divide" (Alasuutari et al. 2008: 15).

A detailed discussion regarding mixed methods research will be given in Chapter 26 of this book.

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3. VIEWS OF DIFFERENT AUTHORS ON THE PROFESSIONAL RESEARCH PROCESS

Scanning the social science literature, we have selected a few descriptions of research processes from different authors. For readers trying to find their way through research literature applicable to a variety of disciplines, the descriptions of a research process as perceived by different authors might be very confusing. The reason for this confusion is embedded in the fact that different authors have different terms for basically the same aspects of the research process. In the following sections, the views of different authors – from both the quantitative and the qualitative perspective – will be outlined and compared.

3.1 The professional research process from a quantitative approach

For the purpose of this discussion, the views of a selected number of research authors which best reflect practical requirements were selected. The first reference in Table 4.2 is from Babbie (2007: 108) and Rubin and Babbie (2001: 109). These are followed by the views of Gravetter and Forzano (2003: 22); Welman, Kruger and Mitchell (2005: 12–13); Bless, Higson-Smith and Kagee (2006: 17); and Neuman (2006: 15). When these various views of the research process are tabulated, it is clear that they do not differ very much from one another (see Table 4.2).

3.2 The professional research process from a qualitative perspective

In order to develop a process best suited to the implementation of the qualitative research approach, the views of four authors are examined and presented in Table 4.3.

Before presenting our integration of these views, a few comments are pertinent:

- Denzin and Lincoln (2005) do not use process terminology such as "planning, selecting, collecting" in their description of the research process. Their phases are offered entirely in the form of lists of items. We are consequently obliged to translate these lists into process language. This inevitably implies some interpretation of the authors' meaning, for which we have to assume responsibility.
- Confusion about the nature of the steps to be performed within these broad phases of the process has arisen owing to a confusion in the conceptualisation of "qualitative research" *vis-à-vis* field research. Whereas qualitative research is the term applied to the broadest approach as described by Denzin and Lincoln (2005), as noted above, field research is but one of the many methodologies. In our integration of the research process, the broad, overall qualitative approach will be presented.
- Several authors on the framework of qualitative research mention the importance of a literature review and its place in the research process (refer to Denzin & Lincoln 2005: 25 and Berg 2007: 25 in Table 4.3). However, some refer only vaguely to this aspect, while most ignore it altogether. The place and importance of literature in the research process will be discussed in detail in another chapter.

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SECTION

A

Table 4.2 The research process from a quantitative perspective as viewed by different authors

Babbie (2007); Rubin & Babbie (2001)	Gravetter & Forzano (2003)	Welman, Kruger & Mitchell (2005)	Bless, Higson-Smith & Kagee (2006)	Neuman (2006)
Interest, idea, theory	Research idea	Identify a research topic	Select and formulate the research problem	Select topic
Conceptualisation and operationalisation	Generate hypothesis	Define research problem		Focus research question
	Define variables			
Choice of research method		Determine how to conduct the study (research design)	Choice of research design	Design study
Population and sampling	Identify participants		Description of sample/sampling procedures	
	Select research strategy/design			
Observations (data collection)	Conduct the study/collect data	Data collection	Data collection	Collect data
Data processing			Analysis of data	Analyse data
Data analysis (and drawing conclusions)	Evaluate the data/analysis and interpretation	Analyse and interpret research data	Interpretation of results	Interpret the data
			Conclusions and recommendations	
Application	Report the results	Write report	Writing the research report	Inform others

- Berg (2007: 24) as well as Neuman (2006: 15) emphasise the fact that the qualitative research process is conceived as spiralling rather than linear in its progression. In his proposed approach (see Table 4.3) Berg (2007: 24) begins with an idea, gathers theoretical information, reconsiders and refines his idea, begins to examine possible designs, re-examines theoretical assumptions and refines them and perhaps even his original or refined idea. Thus with every two steps forward, one takes a step or two backward before proceeding any further. One is thus spiralling forward, never actually leaving any stage behind completely. Although our integration of the qualitative research approach is presented in a linear form, we fully agree that the steps move in circles and that the process can never be followed rigidly like a recipe.

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Table 4.3 The research process from a qualitative perspective as viewed by different authors

Berg (2007)	Denzin & Lincoln (2005)	Neuman (2006)	De Vos (1998)
Research idea			Choice of a research problem/topic/theme
	The researcher as a multicultural subject	Acknowledge social self	
Theory/reviewing the literature	Theoretical paradigms and perspectives	Adopt a perspective	Decision on the qualitative choice
Designing research project	Research strategies	Design study	Selection of the qualitative design
Data collection and organisation	Methods of collection and analysis	Collect data	Preparation for data collection
Data analysis		Analyse data	Data collection and analysis
		Interpret data	Data verification
Dissemination	The art of interpretation and presentation	Inform others	Report writing

By using tables 4.2 and 4.3 as broad guidelines, and integrating the feedback from lecturers who have used the earlier editions of this book, we have developed an enriched model of the social research process, which will be outlined and described below.

4. A RESEARCH PROCESS MODEL

The process outlined in Table 4.4 displays the process models of quantitative and qualitative research adopted by the authors of this book. It is important to note that a researcher may decide to adapt this model to the needs of a certain project; one researcher may regard some steps as irrelevant to his or her project, whereas another might decide to add a step relevant to a specific project. In most instances a researcher might perhaps find it appropriate in a specific context to change some of the steps around. This is completely acceptable within the chosen process. However, two very important actions need to follow such a deviation from the proposed process. First, every decision to change, include or exclude a step or even phase should be properly justified. It is not acceptable to deviate without a thorough discussion and justification of the decision. Second, the researcher should consider the implications of such a change for the process as a whole, and for the subjects in particular, and document these considerations. Within this context, the research process is outlined as follows:

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SECTION A

Table 4.4 The social research process

Steps common to the qualitative and quantitative processes	
Phase 1: Selection of a researchable topic	
Step 1: Identify a researchable problem/question	
Phase 2: Formal formulations	
Step 2: Assess suitability of the research approach Step 3: Formulate the problem/question/hypothesis/goal and objectives Step 4: Draft the research proposal Step 5: Consider the ethical implications of the study	
Steps unique to the quantitative process	**Steps unique to the qualitative process**
Phase 3: Planning	
Step 6: Undertake an in-depth literature review Step 7: Select a research design Step 8: Select method(s) of data collection and analysis Step 9: Select a sampling plan	Step 6: Select a paradigm and consider the place of a literature review Step 7: Select a research design or strategy Step 8: Select method(s) of information collection and analysis Step 9: Frame and develop the sample
Phase 4: Implementation	
Step 10: Conduct a pilot study Step 11: Conduct the main research	Step 10: Consider the applicability of the elements of a pilot study Step 11: Consider entry and access in implementing the design, collect materials, record, and undertake literature study (where applicable)
Phase 5: Data analysis, interpretation and presentation	
Step 12: Process and analyse data and interpret results Step 13: Write the report	Step 12: Process and analyse data and verify results. Select additional criteria for judging adequacy Step 13: Plan narratives and write the report

4.1 Phases and steps of the research process common to both the quantitative and qualitative research processes

From Table 4.4 it is clear that the first section of the research process is common to both approaches. These steps are discussed in more detail in Table 4.4.1.

PHASE 1: SELECTION OF A RESEARCHABLE TOPIC

Step 1: Identify a researchable topic or theme, that is, by observing practice and scanning the literature. This is done with a view to selecting the research goal and

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Table 4.4.1 Steps common to the quantitative and qualitative processes

Phase 1: Selection of a researchable topic
Step 1: Identify a researchable topic/theme
Phase 2: Formal formulations
Step 2: Assess the suitability of the research approach Step 3: Formulate the problem/question/hypothesis/goal and objectives Step 4: Draft the research proposal Step 5: Consider the ethical implications of the study

objectives; unit of analysis; the most meaningful theoretical perspective(s); research design or strategy; and the methods of data collection and analysis.

If the researcher's preference – based on experience, interest or circumstances – is tentatively for a quantitative study, he or she will scan the literature, bearing in mind the definition of central concepts and selection or construction of measuring instrument(s). Researchers who prefer to conduct qualitative research also need a literature scan at this stage – since they must position themselves as a multicultural subject and select a paradigm or perspective (Denzin & Lincoln 2005). At this early stage qualitative researchers usually formulate their topic or theme in the form of a research question. In some instances, the choice of a topic will be the main determinant of the approach selected.

The problem or question must then be identified. This means that a tentative formulation on a first level of thought should be done. In the case of qualitative research, a relatively careful formulation of the question is acceptable at this stage.

PHASE 2: FORMAL FORMULATIONS

Step 2: Carefully assess the suitability of either the quantitative, qualitative or mixed methods research approach for the topic chosen, and make a decision on this matter. It is important that the researcher ignores his or her bias to the one or the other if the topic does not lend itself to a certain approach. For example: if the research question to be answered necessitates a study where the relationship between two variables must be determined, a qualitative study will not be possible.

Step 3: If a decision was made in Step 2 to conduct a quantitative study, draft a formal problem formulation and decide on hypotheses. If a qualitative study was decided upon, draft a formal problem formulation and formulate the research question carefully or review the formulation of Step 1. If a mixed methods research approach was selected as the most suitable approach, formulate a formal problem statement as well as a research question to address qualitative data or a hypothesis to address the quantitative data. Part of Step 3 is also the formal formulation of the goal and objectives of the study.

Step 4: Draft a research proposal. The proposal is the formal problem – question/hypothesis – as well as the goal and objectives formulation (Step 3 above) described in manageable detail with a view to acceptance and/or registration as a postgraduate student, and/or obtaining funds from a funding organisation for the

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SECTION
A

proposed research. The purpose of the proposal will determine whether this document can be regarded as a provisional attempt – to be elaborated on at a later stage – or whether this attempt will be a final product, that is, as a discussion document. The difference at this stage will to a large extent be focused on the depth of research methodological decisions taken. In some instances (e.g. where the purpose of the proposal is to obtain funding or to obtain permission on ethical issues regarding the experimental phase of the project), the document is required to incorporate a considerable degree of finality on research methodology. In other instances, the document will be aimed more at clarification of the topic, with the assumption that the finer details on methodology will be decided on as the study progresses. A more detailed discussion on the research proposal follows in Chapter 7.

Step 5: Consider the ethical implications of the study. Each researcher has the responsibility to ensure that every research project meets all the ethical requirements as discussed in Chapter 8. As part of phase 2, Step 5 implies that the researcher should think critically about the ethical implications of an investigation and then describe the relevance thereof, as well as how he or she will deal with each relevant ethical issue in the context of the study.

If the decision was taken in Step 2 to work from either a quantitative or qualitative or mixed methods perspective, and the research proposal was submitted and accepted, the research process will now proceed according to different steps. The steps to be taken when a quantitative approach is followed will first be discussed, whereafter the steps to be taken when a qualitative approach is selected will receive attention.

4.2 The professional research process from a quantitative perspective

The steps to be taken when conducting research from a quantitative approach (schematically outlined in Table 4.4.2) will now be discussed in more detail.

Table 4.4.2 Steps unique to the quantitative process

Phase 3: Planning
Step 6: Undertake an in-depth literature review Step 7: Select a research design Step 8: Select method(s) of data collection and analysis Step 9: Select a sampling plan
Phase 4: Implementation
Step 10: Conduct a pilot study Step 11: Conduct the main research
Phase 5: Data analysis, interpretation and presentation
Step 12: Process and analyse data and interpret results Step 13: Write the report

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PHASE 3: INITIAL PLANNING OF THE QUANTITATIVE RESEARCH PROCESS

Step 6: Undertake an in-depth literature study on the subjects mentioned in Step 1, with a view to final selection of the most meaningful theoretical perspective(s), research design, data collection method(s) and definition(s) of central concepts, as well as the selection or construction of measuring instrument(s). If applicable, reformulate the problem in the form of a testable hypothesis or hypotheses.

Step 7: Select the research design. Definitions of research design are rather ambiguous. A detailed discussion of the concept of design will be given in Chapter 10. However, at this stage it is relevant to note that, for the purpose of this model, research design will refer to a set of logical arrangements from which prospective researchers can select one suitable for their specific research goals. In broad terms this means that the researcher, depending on the problem, will make a choice between an experimental, quasi-experimental or survey (non-experimental) design. It does not refer to all the decisions a researcher makes in planning the study. If the researcher's choice differs minimally from that indicated in the research proposal, this is normal and should not cause undue concern, unless large amounts of money are involved. However, radical decision changes are rare at this stage of the research process.

Step 8: Select data collection method(s) including the measuring instrument(s). This step consists of the final selection of the most relevant method(s) and measuring instrument(s) to obtain the data for the study. If nothing relevant is available, the researcher may consider the development of new methods or instruments as discussed in chapters 12 and 13 on methods of data collection. The decision on the most appropriate method of data analysis would have to be related to the data collection method selected.

Step 9: Select a sampling plan. A sample is a small representation of a whole. The most basic considerations in sampling are size and representativeness. The size must be adequate to allow estimates about the characteristics of phenomena with reasonable precision. Different strategies can be utilised to obtain the best possible sample, and a final decision in this regard must be taken. A detailed discussion on sampling strategies will follow in Chapter 14 on sampling.

PHASE 4: IMPLEMENTATION OF DECISIONS

Step 10: Conduct a pilot study before attempting a major research endeavour. The pilot study can be viewed as the "dress rehearsal" for the main investigation – a small-scale implementation of the planned investigation in an attempt to bring possible deficiencies to the fore timeously. The main purpose in conducting a pilot study is to assess the feasibility of the study and to test the measuring instrument.

Step 11: Conduct the main research, that is, implement all the decisions taken up to this stage with regard to the research design, data collection method(s) and sampling plan, and utilise in the main project the lessons learnt from the pilot study.

PHASE 5: DATA ANALYSIS, INTERPRETATION AND PRESENTATION

Step 12: Process and analyse the data and interpret the results. The actual process-

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ing, analysis and interpretation of data must now take place. These will be discussed in Chapter 16.

Step 13: Write the research report. Writing the research report is a very important aspect of the research. As this is the only way in which the whole project will be communicated to other role players, this task should not be underestimated. Bear in mind that the dissemination of information might determine the long-term effect of the research results. A detailed description of the writing of the report follows in Chapter 17.

4.3 The professional research process from a qualitative perspective

If the decision was made in Step 2 to work from a qualitative perspective, the research process will now proceed according to the steps as graphically outlined in Table 4.4.3. These phases and steps will now be discussed in more detail.

Table 4.4.3 Steps unique to the qualitative process

Phase 3: Planning
Step 6: Select a paradigm and consider the place of a literature study Step 7: Select a research design or strategy Step 8: Select method(s) of information collection and analysis Step 9: Frame and develop the sample
Phase 4: Implementation
Step 10: Consider the applicability of elements of a pilot study Step 11: Consider entry and access in implementing the design, collect materials, record, and undertake literature study (where applicable)
Phase 5: Data analysis, interpretation and presentation
Step 12: Process and analyse data and verify results with literature control. Select additional criteria for judging adequacy Step 13: Plan narratives and write the report

PHASE 3: PLANNING THE QUALITATIVE RESEARCH PROCESS

Step 6: Researchers must carefully account for the location of themselves as a multicultural subject and for their selection of paradigm and perspective briefly mentioned in their proposal (Step 4). This justification is crucial as it directs the selections they have to make in Steps 6 and 7. It also forms an important part of the final research report. The place of literature in the study is an important one, as this will guide the process. A literature review at this stage is not excluded if the researcher needs to describe the underlying assumptions of the research question, wants to display the research paradigm that underpins the study, or describe the values he or she brings to the research enterprise. The principles that will guide this decision-making process will be outlined in Chapter 18.

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Step 7: Select a research design (or strategy). The various designs/strategies of inquiry used by qualitative researchers will differ depending on the purpose of the study, the nature of the research question, and the skills and resources available to the researcher. Each of the possible designs/strategies has its own perspective, method(s) of data collection and techniques for data analysis. During the research process, qualitative researchers will create the design best suited to their project. The various designs will be discussed in Chapter 19.

Step 8: Select method(s) of information collection and analysis. This step is often referred to as the planning for the fieldwork, that is where the researcher must decide how to obtain the data from the subjects in a scientific way. Furthermore, preparation must be done on how the data will be processed and thus reduced to a digestible format.

Step 9: Frame and develop the sample. Qualitative research requires the data to be collected to be rich in description of people and places. As such, a decision on how the sample will be framed and developed will have to take into account the identification of sources rich in information.

PHASE 4: IMPLEMENTATION OF DECISIONS

Step 10: The researcher should now consider the applicability of elements of a pilot study. In some situations – when conducting qualitative research – the respondents are limited and opportunities for data gathering are rare, and therefore a pilot study is almost impossible and thus not feasible. However, sometimes the researcher utilises a data-gathering instrument (such as an interview schedule) with a selected group of people. As such, it might be advisable to test the schedule with one or more of the respondents in order to enable the researcher to do a practice run before conducting the main study. It is important for the researcher to consider all the implications of undertaking a pilot study in a qualitative project, and to act accordingly.

Step 11: Consider entry and access in implementing the design, collect the materials, and record and undertake a literature study (when applicable). All the decisions with regard to obtaining the research material are now implemented. The data should be recorded immediately so as to ensure accuracy. It is obviously important to adhere to ethical considerations when implementing the planned study. Also bear in mind that reasons should be documented when there are deviations from the original (often formally accepted) proposal.

A critical review of the literature should enable the researcher to critique previous research that relates to the general question selected. It should, furthermore, lead to the development of a framework that would allow for the research results to be interpreted in relation to the existing theory. If the researcher has – for a valid, substantiated reason – decided to undertake a literature study in Step 6, the place of the literature in this step should be understood and utilised in the correct manner. It is important to understand the importance of a literature control at this stage of the process and not to assume that a literature study in Step 6 replaces the literature control in this step. A detailed discussion on the principles that will guide

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this decision-making process with regard to the place and importance of literature in the study will be outlined in Chapter 18.

■ PHASE 5: DATA ANALYSIS, INTERPRETATION AND PRESENTATION

Step 12: The researcher must now process the data and analyse them according to the selected data analysis strategy (refer to Step 8). The results must be verified against the literature by embedding them in larger theoretical perspectives/paradigms. Additional criteria for judging adequacy include considerations on sampling decisions made, data collection operations, and analytical strategies followed. Ensure that findings are grounded in the data, that inferences are logical, and that strategies for increased credibility were used. Details on these will follow in the chapter on data analysis (Chapter 24).

Step 13: As with the report in a quantitative study, the importance of disseminating the results of a research study should not be underestimated. This is an important step in the process and must receive adequate attention. The challenge is to write a narrative that accurately reflects the core of the research undertaken.

SUMMARY

This chapter describes a practical model of the process of research in the caring professions when working from a quantitative or qualitative perspective. As such, the views of different authors on the research process are explored before a research process model is proposed. This model outlines a unique perspective by highlighting certain steps that are common to both approaches before a decision is taken. In the following chapters the different phases of this model will be discussed in more detail, and the steps and phases outlined in this chapter will form the structure for discussion.

Self-evaluation and group discussion

Your lecturer's assignment is that you are to decide whether you want to undertake a quantitative or qualitative research project. Make a choice, and justify your choice to the tutor or to the group.

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SECTION

B

Steps common to both the quantitative and the qualitative research process

STARTING YOUR OWN RESEARCH	
Section B Steps common to both the quantitative and the qualitative research process	
Chapter	**Research process**
5. Selection of a researchable topic	**Phase 1: Selection of a researchable topic** Step 1: Identify a researchable problem/question
6. Formal formulations	**Phase 2: Formal formulations** Step 2: Assess the suitability of the research approach Step 3: Formulate the problem/question/hypothesis/goal and objectives
7. Writing the research proposal	Step 4: Draft the research proposal
8. Ethical aspects of research in the social sciences and human service professions	Step 5: Consider the ethical implications of the study

This section describes the first five steps of the research process as we view it, comprising the search for a researchable topic; assessing the suitability of either the quantitative or the qualitative research approach; formulating the research problem, question, hypothesis, goal and objectives formally; compiling a research proposal for presentation to a university or university of technology department of social science, or to a committee responsible for funding research; and considering the ethical implications of the study.

5

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Selection of a researchable topic

Learning objectives

Studying this chapter should enable the reader to

- select a researchable topic
- gain an understanding of where research topics are found
- consider different factors which may influence the selection of the most suitable research topic.

1. INTRODUCTION

In the previous chapter the research process was described as consisting of different phases with a number of steps that differ depending on whether the researcher uses a quantitative, qualitative or combined methods approach. The first few steps common to these processes will receive attention in chapters 5 to 9. In this chapter the first phase common to both approaches – selecting a researchable topic – is described.

2. PHASE 1: SELECTION OF A RESEARCHABLE TOPIC

2.1 Step 1: Identify a researchable problem/question

Before we can conduct or even design a research study, we must have a clear picture of the direction of the study, which can then be refined in the form of a research problem, problem statement and/or research question. The literature is confusing in the terms used to assist a researcher in shaping this first phase of the research journey, and individuals unfamiliar with writing about research may struggle with this. Some authors refer to this phase vaguely as "focus the project" (Kreuger & Neuman 2006: 13) or "getting started" (Babbie 2007: 109) while others propose very distinct activities in identifying a general topic area and refining this

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into a research question and, in the case of quantitative research, hypotheses (Grinnell & Unrau 2005). Yet others prefer "problem formulation" (Monette, Sullivan & DeJong 2008: 9) as the terminology to frame the first phase of the research process. It may be helpful to think of a problem statement or a research question. It may even be necessary in some studies to make a clear distinction between the two. But in essence, this first phase is about the need for the study – that is, what do you want to know? The statement about what exactly we want to find out or achieve by undertaking the research will flow from a general problem area or topic of interest.

We must also ensure that it is researchable before we refine it as a research project. It is not uncommon for this initial formulation to be rather vague and imprecise, and thus it needs to be narrowed down to specific issues for which empirical data can be gathered. Denscombe (2002) highlights three reasons for a clear vision of the purpose of the research. Firstly, that it allows "outsiders" to understand the intention of the research and determine exactly what motivated the investigation and what the researcher is trying to find out. Secondly, it allows readers to evaluate the research by providing benchmarks against which to judge not only what the project aimed to achieve, but also what it did not set out to do. Lastly, a clear statement of purpose provides the researcher with a good platform from which to conduct the investigation.

When researchers start out with their research, they display enthusiasm about a topic of particular interest and want to "get into it". The first phase of selecting, defining and refining a research topic may soon become a frustrating and time-consuming activity not quite anticipated. It is, however, important to keep in mind that this phase is one of the most important in the research journey and, if executed properly, will ensure a smooth implementation and scientific rigour. If, however, this phase is rushed, one may easily find later in the process the need to revert to it so as to enable a better focus. It is much the same as undertaking a trip to an exotic unknown destination. First one needs to identify one destination from the many on offer before one selects a particular area at that destination that appeals to one more than the others. One then has to decide what do one wants to do/know/experience about that particular area before one works on the best route to get there. It is rather senseless to plan the route before one knows where one is going. As Blaikie (2000: 45) states: "The statement of the research topic is both a signpost and a set of boundary markers: it sets the researcher on a specific path and defines the territory to be explored." We will use this chapter to assist the reader with choices related to the selection of a topic and the next chapter to refine this topic in what we term *problem formulation*.

2.1.1 What motivates research?

The motivations for doing research are varied and not always purely tied to knowledge development as one would want to believe. In the broadest sense, motives for undertaking research are associated with the type of research, that is, whether it is basic (or theory-oriented) research or whether it is applied (or practice/policy-oriented) research. The former is concerned with producing knowledge for understanding and the latter with producing knowledge for action (Blaikie 2000). This distinction is discussed in more detail in other chapters in this book. On a more pragmatic

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level, though, there are other motives underpinning the decision to do research. Often, and for the predominant audience of this book, it may be to satisfy the requirements for a course of study or a thesis towards a qualification – either at undergraduate or postgraduate level. But research may also be undertaken as contracted research – with public or other investor funding, in which case the research starts as a directive from others within a certain budget. Organisational-based research is normally shaped to satisfy a need in practice or to gather information to determine a course of action, but if the organisation is a university, the kind of research undertaken may be aided by the academic freedom to inquire about certain topics, afforded them by virtue of being university-based academics. However, increasingly so, researchers need to be accountable for the time and money used to engage in research and, more often than not, research projects will only be supported where clear benefits and measurable outcomes can be demonstrated.

In addition to these technical and the obvious scientific considerations, Sarantakos (2005: 13) identifies a number of motives for social research:

- Educational – to educate and inform the public
- "Magical" – to offer credibility to views held by researchers, their sponsors and/or agencies
- Personal – to promote the academic status of the researcher or to satisfy personal curiosity
- Institutional – to enhance the research quantum of the institution for which the researcher works
- Political – to provide support for political plans and programmes or to feed into the strategic policy directions. Rubin and Babbie (2005) agree that political considerations often provide the backdrop for research.
- Tactical – to delay decisions or action for as long as the investigation is under way.

A discussion by Rubin and Babbie (2005) identifies another issue that can be added as a motive for research:

- Ethical – practitioners may violate their ethical responsibility if they refrain from using research to guide practice, and the drive for ethical conduct can as such become a motivating factor for research.

In practice, these motives are hardly mutually exclusive, and research tends to be underpinned by a combination of motives. Generating research topics can sometimes be purely the result of serendipity or managerial decisions.

2.1.2 Where are research topics found?

There are various sources for the identification of research topics and, in fact, almost anything can be a source of useful ideas. In some respects it is more the extent of possible topics than the absence of one that makes the selection of a topic such a hard decision (so many interests, so little time!). Knight (2002: 10) states that interest in a topic may be a starting point, although it has also been insisted that interest can be a treacherous guide unless there is someone around to bring it within man-

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ageable and worthwhile bounds. As indicated above, sometimes research topics have less to do with personal interest and more to do with external agendas, such as strategic intent, government directives or funding options. Some topics emerge from engagement in literature – be it on theories in a particular field of interest or on previous research conducted in the field. One of the most salient sources of research topics is questions and problems that emerge from daily practice. Irrespective of the force behind the selection of a research topic, it is important to bear in mind that any research project requires commitment in terms of time, money, energy and other resources, and unless it is underpinned by a level of excitement, interest or passion, the project is bound to fail on some level or another. For the purposes of this discussion, the sources of research topics will be broadly classified as practice, theory, previous research and personal interest or intellectual curiosity.

PRACTICE

Our most evident source is our contact with the external world and the direct observation of it. Mouton (2001: 27) notes that people who are more aware of what is going on around them and who are more sensitive to their surroundings are more likely to come up with interesting topics for research. Most research problems arise from a concrete problem observed in reality. In selecting a topic, researchers often need to look no further than the daily newspaper, which is filled with the many social problems society faces and encompasses a range of issues for study. Professional practitioners, who are routinely involved with many of these problems, often discover research topics during their daily practice (Monette et al. 2008). This is all quite natural for applied disciplines where the pursuit of knowledge meshes with the goal of improving practice. A researcher might become aware of certain defects in service delivery, and also defects in the knowledge base underlying the delivery of certain services. The researcher's feeling of professional responsibility to enhance the underlying knowledge base of the profession may then be stimulated.

According to Rubin and Babbie (2005), in the applied disciplines the impetus for selecting a topic should come from decisions that confront agencies or be aimed at the information needed to solve practice problems. In fact, a study is more likely to have value if it is selected because it addresses the information needed to guide policy, planning or practical decisions. Discussions with colleagues, managers or supervisors may be very helpful in this regard. Mouton (2001: 28) states that potential supervisors may be a first stop for research ideas, as they may have interesting research ideas in their head that they never had the time to follow through. Alternatively, they may be (or know of others in the organisation or related service agencies) involved in existing research that the researcher can "slot into". Programme and practice effectiveness evaluations have become increasingly important activities for human service professionals. Organisations that fund services typically demand that evaluation research be conducted. Such research can take many forms and will be addressed in the chapters dealing with design and evaluation research. An agency may, for example, require a needs assessment to gather information about its clients if it is to deliver services to them efficiently. Or a practitioner may need to assess which intervention strategy will be most effective with a particular problem. Monette et al. (2008) state that the ability to find problems in practice settings that could be the focus of programme evaluation research is limited only by

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the creativity and imagination of the practitioner. And it is not only the evaluation of services that may spark research topics. Our understanding of learning, human development, families and groups, organisations and society, may be the topic of research (Monette et al. 2008). Even thinking about the site of service delivery and the issues and people in it will foster ideas about what research topics are likely to be significant for practice.

The role of intuition in this process should not be underestimated. Studies of eminent scientists reveal the central role of creative insight – intuition – in their thought processes. It has been suggested that intuition springs from a rational process at the subconscious level (Grinnell & Unrau 2005) and, by allowing ideas to incubate, the researcher may find richer research questions evolve. This is also true for professional judgement and practice wisdom. Grinnell and Unrau (2005) state that it is unfortunate that the experience of practitioners is rarely documented and evaluated in a way that would make it available to others. If these "hunches" are respected, they may become a valuable topic for research.

THEORY

Theoretical concerns are, to some degree, an issue in all research. Even if the topic originates elsewhere, a body of literature is likely to help shape the way the topic, and eventually the problems or questions, are formulated. But it is also possible to elicit research topics from theory. This may include sourcing them from theory, testing theory or generating hypotheses from theory. Monette et al. (2008: 27) mention that a theory is always tentative in nature – that is any theory is best viewed as a *possible* explanation for the phenomenon under investigation. Research can gather evidence that either supports or fails to support a theoretical explanation. Topics for research can therefore often be sourced in questioning theories telling us what will happen under certain conditions and why it will happen. Certain research topics, however, may be selected specifically to test some aspect of a given theory. According to Monette et al. (2008), many theories relevant to human services have not been thoroughly tested. We either do not know how valid the theories are, or we do not know how wide the range of human behaviour is to which the theory can be applied. A research topic may then be selected on the basis of testing that particular theory. In some cases, theorists themselves may pose problems experienced with particular theories, which, as highlighted by Blaikie (2000), may stimulate a research topic.

Researchers may also approach the verification of a theory by developing and testing hypotheses. Hypotheses state what we expect to find rather than what has already been determined to exist. New hypotheses can be generated in a variety of ways. A creative, innovative person may simply sit in his or her study and think up hypotheses that may stun the world. An illustration is reported by Max Wertheimer (1945), the great Gestalt psychologist, who had the good fortune to study the thought processes of Einstein. He tells of the "wonderful days, beginning in 1916, when for hours and hours" he sat with Einstein and investigated the concrete events in Einstein's thoughts. The theory of relativity began with such fantasies as: "What if one were to run after a ray of light?" and "What if one were riding on the beam?" (Hyman in Franklin & Osborne 1971: 46). The chances that any ordinary researcher in one of the caring professions, or any researcher in any discipline for

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that matter, would generate such earth-shattering hypotheses in this way are not altogether nil, though they are fairly slender. So we do not wholly discourage prospective researchers from "climbing onto sunbeams".

An alternative way in which hypotheses can be generated is by studying the literature of a field which interests the prospective researcher, and generating hypotheses from such a study. This is a creative process that depends in part on the insight of the researcher. A major purpose of developing hypotheses in research, according to Monette et al. (2008), is to test the accuracy of theories too broad and too abstract to be directly tested.

PREVIOUS RESEARCH

Another possible source for the identification of research topics is previous research. Previous investigations can induce new ones. The prospective researcher should remember that research projects are not selected in a vacuum but that the researcher is stimulated by the ideas and the research of others. Efforts to come up with creative ideas in isolation often lead to feelings that one has lost one's creative powers. However, if researchers start by reading other studies in their area of interest, they can often see new things that need to be done to improve the research, or new applications for old research. As all research has limitations, some questions are answered by it, but others remain. It is common for researchers to conclude reports with suggestions for future research that follow from the findings that have been presented (Grinnell & Unrau 2005).

Students in the human sciences may be tempted to reinvent the wheel rather than learn from previous efforts. There is a great paucity of studies replicating research done in one culture in a different cultural context to identify similarities and/or differences. This can be the case either because of one's disagreement with the results or with the procedure used, because of the existence of non-clarified and still unexplained facts highlighted by the first research, or even by the necessity of repeating the research in different situations with different groups or participants. As stated by Grinnell and Unrau (2005), sceptical curiosity means that all findings derived from a research method should be – and most importantly, must be – questioned, and research studies, whenever possible, should be replicated. Replicating research or reworking an old project with a new twist can be very important and more feasible.

PERSONAL INTEREST AND INTELLECTUAL CURIOSITY

Flick (2006) states that despite all methodological controls, influences from interests and social and cultural backgrounds are difficult to avoid in any research or its findings. A researcher's personal interest and intellectual curiosity certainly comes into play in all research, but sometimes it is driven by it. Graziano and Raulin (2000: 3) quote Linus Pauling (1981) as stating that satisfying one's own curiosity is one of life's greatest sources of satisfaction. This is the ideal, as a study is more likely to be useful if the topic is selected because it addresses questions that are about information needed to guide practice and that are of personal interest to the researcher. However, sometimes a topic is researched merely for reasons of curiosity, without a predetermined goal that it will guide practice. Information to guide practice may naturally become a product of the research undertaken out of mere curiosity.

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Graziano and Raulin (2000) point out that a scientist's pursuit of curiosity follows unknown paths, sometimes resulting in dramatic and unanticipated discoveries that can appear to be accidental – a matter of luck. But when scientists drop everything to indulge their curiosity, they do so with a "prepared mind" – a disciplined curiosity that makes them keenly alert to the possibility of accidental discoveries. Scientists' curiosity is active, leading to discoveries not through aimless luck, but because it is embedded in a prepared mind and nurtured by long hours of research. It is a disciplined curiosity, sharpened and focused by labour and frustrations as well as by successes. Reading the biography of Madame Curie, who discovered radioactivity, illustrates this point dramatically. Davidson and Tolich (2003: 91) state that "[i]f you are what you eat, then a researcher must 'be', as far as his/her academic identity is concerned, what he/she collects". A person's personal bibliography and personal knowledge of a wide literature, including the jumble of cuttings, photocopies or ideas from books and magazines, may be a good place to start searching for a topic.

Research can be prompted by mere inquisitiveness about an interesting phenomenon, or about something which presents a puzzle, that is something which attracts the researcher's attention because it is somewhat atypical. Monette et al. (2008) warn that a researcher who chooses a topic based on personal interest only should be prepared for the possibility that others will fail to see the worth of that research. They continue to state that these researchers must take extra care to demonstrate the scientific worth of their projects. Other considerations such as usefulness and feasibility have to be part of the picture. Yet it remains a very basic truth that real researchers, including all the really great researchers of the past, are driven by a certain "informed inquisitiveness" – such as that which drove Marie Curie to burn down masses of pitch until the radioactive element was isolated. When inquisitiveness plays an important role in the choice of a theme, the personality or temperament of the researcher possibly also plays an important role.

As many theses in libraries across the world will bear out (or confirm), many a valuable study also has had its origins in personal experience, where a researcher has an interest in an aspect of human behaviour or service delivery due to personal concerns and/or unresolved issues in this regard. They choose topics that are of relevance for themselves in terms of their own identity (age, sex, ethnicity), their social background (culture, religion, social class), their qualifications and career path (job-related issues or professional development) or their personal biography (health, family, lifestyle and interests) (Denscombe 2002). Studies of single fathers, interracial couples, adult survivors of sexual abuse, breast cancer survivors, individuals who struggled with physical disability or divorce, or the problems of migrants or working mothers are often motivated by personal concerns. This may be more common in applied fields such as management, nursing, community development, education and clinical psychology, where a strong autobiographical element often drives the research interest. Given the amount of personal effort and commitment demanded for the successful completion of research, personal interest is not necessarily a bad thing as it provides the passion and drive needed to stay with the project when things get difficult. But, as Denscombe (2002) cautions, it is crucial to distinguish between the positive influence of a personal interest in the topic and the detrimental impact of having such a personal interest that the researcher

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approaches the topic with conclusions already set and an unwillingness to discover what is not desired.

2.1.3 Which factors influence the selection of the most suitable research topic?

A researcher needs to be sure that the topic and subsequent refining of the topic and research questions fall within the realms of social science and are not questions that are better suited to the realms of aesthetics or religion/faith, where different criteria of proof operate. According to Denscombe (2002), a key criterion is whether the questions, results and conclusions will be of the kind that lend themselves to the possibility of being investigated through empirical inquiry and/or rational argument – not a matter of private belief, blind faith or simple assertion. Researchable topics (as opposed to non-researchable topics) must be testable, that is open to proof or disproof. For a problem to be researchable it must demand an interpretation of the data leading to a discovery of fact. And that discovery of fact must go beyond a mere statistical statement of comparative status or relationship. Interpretation of the data is an explanation of the actual meaning of the data that have been gathered, arranged and processed, whether statistically or by any other means. The critical and inevitable question that every researcher facing a corpus of data must ultimately answer is: What is the meaning of all these facts? Rubin and Babbie (2005: 117) add that it is important for a topic to pass the "So what?" test, meaning that the proposed study should have clear significance and utility for practice. Questions based on faith, wisdom, values or common sense do not lead to researchable problems.

More than the criterion of empirical inquiry, a researchable topic should also adhere to the requirement of originality (Denscombe 2002). A researchable topic will include an element that is different from any other investigation on the topic – something that marks the study as different. Even in studies that are replicated, the topic needs to be framed in such a way that the study will contribute new knowledge. In addition to this, a researchable topic will also be linked to what is already known.

In Polansky's classic text (1975: 31–32), he offers a list of the types of question that are not researchable:

- When mere definition is involved. A question such as: "How do foster parents differ from adoptive parents?" is the type of question which Polansky considers non-researchable. A clear definition of foster care and adoption will solve this "research problem". A researchable question will have to delve deeper into the considerations which determine decision making for foster care versus adoption.
- When values are involved. A question such as: "Is it worthwhile to keep malformed babies alive?" cannot be researched, according to Polansky, because it is essentially a value judgement.
- When a question has only one acceptable answer, for instance: "Is it worthwhile to continue offering social services to the aged?" The form in which this question is asked makes it unresearchable, because the answer cannot be other than a "yes". Rubin and Babbie (2005) also state that it is essential that there be more

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than one acceptable answer to the research question for the topic to be researchable.

- When a question has an insidious intent, for example to place a decision which is basically unethical in a favourable light.
- Where matters are susceptible to factual answers but not feasible for the study, because the necessary technology is not (or perhaps not yet) available.

After a researcher has selected possible researchable topics, a number of topics may still be on the table and a few additional factors will have to be considered in order to make the most meaningful selection. These factors may have varying degrees of influence not only on the selection of a topic, but also on the design and execution of the project. According to Blaikie (2000), these may include the range of possible audiences the researcher has to or wishes to take into consideration, such as service users or clients, employers, colleagues, editors of journals or sponsors. Political restrictions that may be imposed by "gatekeepers" include the management of agencies, ethics committees, governments or universities and the types of research that funding bodies are willing to support. Practical factors, including access to respondents or research sites, time and other resources, may also be influential in deciding on the most suitable topic. Monette et al. (2008: 90) advise that a project's feasibility centres on two related concerns, namely time and money, and that a researcher must anticipate problems related to these factors in selecting a focus for the study.

According to Denscombe (2002), the central issue that will influence the selection of a topic is the question if it really matters whether the research takes place. This, according to the author, will be determined by four factors:

- Relevance to existing knowledge (Will the research enhance existing knowledge about the topic?)
- Relevance to a practical need (Will the research be of interest to others or address specific needs related to practice or policy and in some respects to those being researched?)
- Relevance in terms of timeliness (Will the research be well received at this time in respect of current issues and will the researcher be able to complete it on time, given existing resources?)
- Relevance to the researcher (Will the research correspond with the personal agenda of the researcher – albeit personal interest or career goals?)

After studying this section, the prospective researcher may feel a little overwhelmed by the various factors which have a bearing on the choice of a research topic. We may even feel mildly taken aback and ask whether, if the mere choice of a researchable topic is in itself such a gargantuan task, we will ever be able to cope with the rest of the research process. By way of reassurance we wish to state that struggling to select a suitable topic and duly considering and planning the initial stages of a research project are, in a certain sense, the most difficult aspects of the whole undertaking. However, if researchers act with patience and determination at these early stages and conduct the initial selections and planning strategies with due care, they may find that the rest comes surprisingly easily, and that completing

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SECTION **B**

the project becomes less cumbersome. It is the project hastily chosen, hastily planned and rushed into without due consideration that generates the most difficulties later on. Therefore, read everything written under this heading carefully once again, make a list of the factors mentioned here that are of special significance to your particular situation, sleep on your choice of a topic one more night, talk about it to everyone in your intimate circle (even at the peril of becoming a bore!), and you will reap the benefits of a carefully selected topic and a well-planned research project in due course.

SUMMARY

Identification of a research topic can be viewed as the first effort by the researcher to mould a research project. Directly after Phase 1 described above has been executed, that is the selection of a researchable topic, the second phase must be attempted, namely a formal formulation of the problem. The two phases are in fact so intimately intertwined that they are difficult to distinguish from each other, except that the one is a direct product of the other. After a theme has been searched for and found, it must be stated in words, either verbally or (preferably) in written form. The relationship between phases 1 and 2 of the research process can thus be viewed as a process–product relationship. During Phase 1 the process of searching and finding a researchable topic is executed; during Phase 2 the process is refined and manifests itself in a written product, the formal formulation of the research problem.

Self-evaluation and group discussion

You have now selected a researchable topic. Explain the following to your tutor or study group:

- What motivated your topic
- Where you found your topic
- Which factors were most influential in your selection of a research topic

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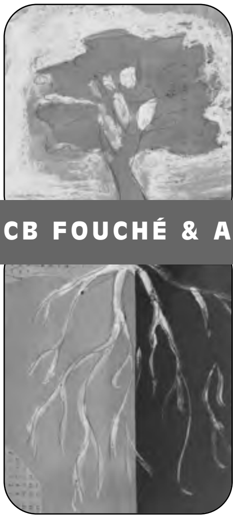

6

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Formal formulations

Learning objectives

Studying this chapter should enable the reader to

- assess the suitability of the research approach (quantitative, qualitative or mixed methods)
- formulate the research question including the unit of analysis and the research goal.

1. INTRODUCTION

Most authors on research methodology stress the importance of pinpointing a specific problem/problems, question/questions or hypothesis/hypotheses as soon as a researchable topic has been identified. This phase is sometimes called "focusing". Kreuger and Neuman (2006: 11) expect the researcher to take the crucial second step in the research process to "narrow down" or focus "the topic into a specific research question" that can be addressed in the study. Graziano and Raulin (2000: 40) call this the problem-definition phase. They maintain that the research process always begins with identifying an area of interest and generating ideas for the study. However, vague ideas are not sufficient. We must clarify and refine them. The goal is to produce one or more clearly posed questions based on a well-developed knowledge of previous research and theory, as well as on the scientist's own ideas and speculations. As the research question typically deals with needed information to solve practice problems, the terms *research question* and *research problem* are often used interchangeably.

Knight (2002: 15) also points out that writing and thinking will be difficult if the researcher lacks focus. Basically this phase answers the *what* question: What is it about this topic that I want to find out? Holliday (2002: 31) states that for some researchers this is quite difficult as it requires a very specific formulation. The care-

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ful conceptualisation and phrasing of the research question, these authors point out, are critical, because everything we do in the remainder of the research process will be aimed at answering that research question. The question might involve a highly specific and precisely drawn hypothesis, or it might be phrased in the much more general manner typical of exploratory research. The questions we ask will largely control the way we conduct the rest of the research process. It will guide decisions about methodology, data analysis and conclusions, and it will equally enable decisions about what to exclude in scoping the empirical phase. Some authors, such as Blaikie (2000), regard the research question as being so core to the whole research process that he defines the other steps in the process as "strategies for answering research questions" (2000: 85) and "methods for answering research questions" (2000: 227).

Flick (2006) points out that the traditional version of quantitative social sciences follows a very linear process, with the starting point – theoretical knowledge – being taken from the literature or earlier empirical findings from which hypotheses are derived. Unlike this linear model, with its goals of testing operational hypotheses using designs that unfold in a relatively orderly fashion, qualitative research questions are more flexible and not always predictable. Flick (2006) suggests that this may even be a circular interlinking of steps that offers the greatest degree of discretionary authority for the researcher – providing maximal opportunity for creativity, as well as the burden of decision making, on an ongoing basis. Although qualitative researchers generally shun hypothesis testing, they may need to formulate research questions to guide them in the study. These may or may not change over the course of the study.

This phase of the research process is thus primarily aimed at enabling the development of a formal, written formulation of the study with a view to finalising a research proposal. The step preceding the formal formulation is assessing the suitability of the research approach. Each of the steps is discussed below and, where relevant, those aspects are highlighted where a distinction is drawn between a qualitative and quantitative approach.

2. PHASE 2: FORMAL FORMULATIONS

2.1 Step 2: Assess the suitability of the research approach

In the previous phase, the researcher made a selection of the research topic after a thorough exploration of possible problems and questions. The researcher now has a certain focus on the proposed research that will enable a careful assessment of the suitability of either the quantitative, qualitative or combined quantitative/ qualitative research approach for the topic selected. At this point, it is really only an assessment of suitability. Only after the thought processes in the next step have also been completed can a final decision on approach be made. In some instances the choice of a topic will be the main determinant of the approach selected, but sometimes the researcher might still be able to change the focus of the selected topic to better suit one or the other approach. It is important that researchers ignore their bias towards either if the topic does not lend itself to a certain approach.

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Prospective researchers should consider the differences between the two approaches and come to a decision as to which one would be the better choice for their project, or whether a combined quantitative/qualitative approach would be appropriate. The characteristics of the quantitative and qualitative approaches are outlined in many research texts, as has been addressed in Chapter 4. Kreuger and Neuman (2006: 16) list the "quantitative style" as possessing the following characteristics:

- Measurement of objective facts
- Focus on variables
- Reliability as the key criterion of scientific excellence
- A value-free stance
- Research conducted independently of context
- Many cases or subjects involved
- Statistical analysis the method of choice
- Researcher maintains detached attitude

The "qualitative style", according to these authors, possesses the following characteristics (Kreuger & Neuman 2006: 16):

- Construction of social reality, cultural meaning
- Focus on interactive processes, events
- Authenticity as the key criterion of scientific excellence
- Present and explicit values
- Situationally constrained
- Few cases or subjects involved
- Thematic analysis the method of choice
- Involvement of researcher

At the very basic level is the distinction made by Monette, Sullivan and DeJong (2008: 87) that qualitative research involves data in the form of words, pictures, descriptions or narratives, while quantitative research uses numbers, counts and measures of things.

The quantitative approach, according to Grinnell and Unrau (2005: 82), is more effective than the qualitative approach in reaching a specific and precise understanding of one aspect (or part) of an already well-defined social problem, while the qualitative approach aims to answer research questions that provide a more comprehensive understanding of a social problem from an intensive study of a few people. Holliday (2002: 5, 7) points out that, rather than controlling variables, qualitative studies are open ended and set up research opportunities designed to lead the researcher into unforeseen areas of discovery within the lives of the people being investigated. This implies that we can explore, catch glimpses, illuminate and then try to interpret bits of reality. Interpretation is as far as we can go, according to this author. In qualitative research there is, however, the very problematic burden of how to manage subjectivity in such a way as to preserve scientific rigour – and also how to account for this management in the written study.

Grinnell and Unrau (2005: 82) remind us that there are also many similarities between these approaches that are especially important to consider in these early

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phases of formal formulations. Both approaches use careful and diligent research processes in an effort to discover and interpret knowledge, both are guided by systematic procedures and orderly plans and both can be used to study any particular social problem.

Most authors agree that, in real life, human sciences research uses both quantitative and qualitative methodology – sometimes consciously, sometimes unconsciously – with increasing emphasis on the use of mixed method designs. As outlined in previous discussions and to be discussed in more detail in other chapters, there is increasing acknowledgement that there are different purposes to research, and researchers are faced with questions that require multifaceted answers for which a mixed methods approach can be helpful (Fox, Martin & Green 2007). However, the different paradigms can be usefully combined only if the researcher has a clear understanding of what each can accomplish. As Kreuger and Neuman (2006: 16) remind us, each has its strengths and limitations, topics or issues where it glitters, and classic studies that provide remarkable insights into social life. By understanding both styles, the researcher will know about a range of research and can use both in complementary ways. In order to make a wise selection, the prospective researcher should carefully study the alternatives so that the choice will best serve the needs.

2.2 Step 3: Formulate the problem/question/hypothesis/ goal and objectives

If the assessment of suitability in Step 2 tended more towards a quantitative study, the researcher would start writing a formal problem formulation and might include the formulation of hypotheses. If a qualitative study was opted for, the researcher would formulate the research question carefully or review the formulation of Step 1 as part of the formal formulation. Flick (2006: 137) asserts that in the course of a qualitative study research questions may become more concrete, more focused and narrowed and revised as the study progresses, but a research question must be formulated as clearly and unambiguously as possible, as early as possible in the life of a project (Grinnell & Unrau 2005: 79). In a quantitative study, the research question will be more explicit and will take into consideration the concepts and variables used.

There are a number of decisions a researcher must take (the process), resulting in a formal problem formulation (the product). This step is thus ultimately a conscious exercise of choices which might previously have been implicitly present. A very important factor underpins this process, namely a review of the literature relevant to the research question. In addition to consulting the literature, two core factors determine the manner in which research questions (or hypotheses) are formulated: the unit of analysis and the research goal (or the type of research question). These are set out below.

2.2.1 Consult the literature

Information pertaining to undertaking a literature review will not be addressed in this section as it will be fully discussed as a separate step unique to the quantita-

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tive and qualitative process in chapters 9 and 18 respectively. The researcher is reminded, though, of the cyclical nature of the research process and the "forward" and "backward" movement that is an inevitable part of the process. In formulating the research question, the researcher will need to review relevant literature – although not necessarily to the same extent as required once a decison on the approach has been taken. Rubin and Babbie (2005: 120) comment that a literature review is not only an important step in the formulation phase, but also in the entire process of designing the study, and is not, in fact, completed at any point in the research process.

Monette et al. (2008: 81) regard the purpose of the literature review at this stage as being to familiarise ourselves with the current state of knowledge regarding the research problem, to learn how others have delineated similar problems, to narrow the focus of the project and to ensure that we do not unnecessarily duplicate what others have done. Davidson and Tolich (2003: 92) regard the latter as the most important impetus at this stage and suggest that once the research question begins to take shape, the library should be the first stop to answer the question: What have others written on the topic?

2.2.2 Selection of the unit of analysis

Rubin and Babbie (2005: 138) identify various kinds of units of analysis, which they define as "people or things whose characteristics social researchers observe, describe and explain". These include individuals, groups (including families and organisations) and social artifacts. Monette et al. (2008: 83) identify similar units, but in refined categories, by listing units of analysis as individuals, groups, organisations, programmes and social artifacts. These authors regard units of analysis as the "specific objects or elements whose characteristics we wish to describe or explain and about which we will collect data".

The selection of a unit of analysis happens almost automatically at the problem identification stage and in most research projects the unit of analysis will be relatively clear – most typical individuals. At this point the researcher has, for example, stated an interest in the identification of the needs of street children (individuals); the extent of influence experienced by teenagers with regard to sexual activity (collectives); or the range of strategic planning activities at a number of companies (organisations). A close look at the unit of analysis may, however, lead a researcher to decide to modify the unit to better suit the general interests or research goal. It is thus important for researchers to realise that the choice of a unit of analysis is inevitable and that it should be consciously built into the process of formal formulations. According to Monette et al. (2008: 86), this is an important task, as specifying the unit of analysis avoids an illegitimate shift from one unit of analysis to another. By not doing this, the researcher may make assertions about one unit of analysis (by, for example, inferring something about individuals) based on the examination of another (e.g. data collected at higher units of analysis, such as groups). They make the point that the unit of analysis refers to "the element *about which* data are collected and inferences made" and that this differs from "the source *from which* data *are* collected". A common example of this difference can be found in census data, which typically report data *about* households (the unit of analysis) on data collected *from* individuals as the source.

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SECTION
B

2.2.3 Choice of the goal and objective of the research

The researcher has to decide consciously what the research goal and objectives are going to be. There is some confusion about the exact meaning of the concepts "purpose", "goal" and "objective" and, therefore, regarding their use. For the sake of clarity, readers should know what we mean when we use these terms in this book.

DEFINITION

The terms "goal", "purpose", "objective" and "aim" are often used interchangeably, that is, as synonyms for one another. The *Cambridge advanced learner's dictionary* (third edition 2005) defines both "aim" and "objective" as "something which you plan to do or achieve". "Purpose" is similarly used synonymously with "aim" as "why you do something or why something exists" while a "goal" is merely stated as "an aim or a purpose". The meaning of "goal" or "purpose", however, often implies the broader, more abstract conception of "something which you plan to do or achieve", while "objective" denotes the more concrete, measurable and more speedily attainable conception of such a "plan to do or achieve". The one (goal, purpose or aim) is the "dream"; the other (objective) is the steps one has to take, one by one, realistically at grass-roots level, within a certain time span, in order to attain the dream. For the purpose of this discussion, we will therefore use "goal" and "objective" in these senses, that is as the terminology for the first- and second-order thinking that takes place to indicate the intended result of the study.

DETERMINING THE GOALS AND OBJECTIVES OF PROFESSIONAL RESEARCH

Kreuger and Neuman (2006) discuss the purpose of a study as being exploration, description and explanation. This typology is well established and found in other textbooks on research methodology (cf. Grinnell & Unrau 2005: 16–19; Babbie 2007: 87–90), while Rubin and Babbie (2005: 123–126) add a fourth purpose of research, namely evaluation. However, confusion often exists among authors as to whether exploration, description and explanation are the purpose/goals of the research, objectives of the research or, in some instances, even types of research. Authors thus differ on the level of conceptualisation on which the typology is placed and, therefore, used.

Another typology whose currency fluctuates, as does that of many basic concepts in the professions, is relevant here. The typology deals with the concepts of basic and applied research, that is classifying the functions of, or as Kreuger and Neuman (2006: 23) put it, "the use of", research in the degree of direct practical application inherent in the findings. Research may, therefore, be labelled as either basic or applied. Basic (or pure) research seeks empirical observations that can be used to formulate or refine theory. It is not concerned with solving the immediate problems of the discipline, but rather with extending the knowledge base of the discipline. (This aim does not preclude the practical application of the findings of basic research, but such is not the investigator's primary intent.) Applied research, on the other hand, most often is the scientific planning of induced change in a troublesome situation.

Basic and applied research are complementary – the advancement of knowledge and the solution of problems are both scientific necessities. In this book we take the

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position that basic and applied research are broad goals of research, and exploration, description and explanation are objectives, mainly of basic or knowledge-generating research. However, we believe that it is possible to add more objectives to these, and they will be discussed under the next headings.

DISCUSSING THE GOALS OF PROFESSIONAL RESEARCH

As determined above, we regard the goals of research as being either basic or applied. Kreuger and Neuman (2006: 23) state that basic researchers painstakingly seek answers to questions that could possibly have had an impact on thinking for over a century. As such, basic research provides a foundation for knowledge and understanding. Sarantakos (2005: 10) regards basic research as concerned with the production of new knowledge and with the increase in scientific understanding of the world. Therefore it is also referred to as pure research. Applied research, however, is aimed at solving specific policy problems or at helping practitioners accomplish tasks. It has a strong emphasis on application and solving problems in practice (Sarantakos 2005: 10). The distinction between theoretical results and practical results marks the principal difference between pure and applied research studies. However, in practice the goals of pure and applied research overlap. Many supposedly pure research findings (especially in the area of human relations) have practical implications. Conversely, most applied research findings have implications for knowledge development.

DISCUSSING THE OBJECTIVES OF PROFESSIONAL RESEARCH

In the discussion above, it was explained why the typology of exploratory, descriptive and explanatory can be regarded as objectives of professional research. Although authors do not agree in naming this typology "objectives", it is a well-established typology with which most researchers can easily identify. However, there are also various other "types" (Kreuger & Neuman 2006), "purposes" (Rubin & Babbie 2005; Babbie 2007) or "types of research questions" (Mouton 2001: 53) that can be identified in terms of our understanding of research objectives, and that can be added to this list. A more comprehensive list would thus include research (with either a basic or applied goal) with the objective of exploring, describing, explaining, correlating or evaluating, for instance, a social or educational programme; developing an intervention; initiating participatory action; or conceptualising or utilising exegetical methodologies.

Studies may have multiple objectives, but one objective is usually dominant. It is useful in refining the study to consider the action (in terms of a verb) of the research, that is to explore, describe, explain, correlate etc., as this will lead to different objectives.

- *Exploratory research.* This is conducted to gain insight into a situation, phenomenon, community or individual (Blaikie 2000). The need for such a study could arise out of a lack of basic information on a new area of interest, or in order to get acquainted with a situation so as to formulate a problem or develop a hypothesis. As such, Kreuger and Neuman (2006) point out, exploratory research may be the first stage in a sequence of studies. The answer to a "what" question would, according to Mouton (2001), constitute an exploratory study. Generally,

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exploratory research has a basic research goal, and researchers frequently use qualitative data.

- *Descriptive research.* Exploratory and descriptive research have some similarities, but also differ in many respects. Although they might blend in practice, descriptive research presents a picture of the specific details of a situation, social setting or relationship, and focuses on "how" and "why" questions (Kreuger & Neuman 2006: 23). The researcher, therefore, begins with a well-defined subject and conducts research to describe it accurately, whereas in exploratory studies, the researcher aims to become conversant with basic facts and to create a general picture of conditions. Descriptive research can have a basic or applied research goal and can be qualitative or quantitative in nature. In qualitative studies, according to Rubin and Babbie (2005: 125), description is more likely to refer to a more intensive examination of phenomena and their deeper meanings, thus leading to thicker description. In quantitative studies, description typically refers to the characteristics of a population (Rubin & Babbie 2005: 125).
- *Explanatory research.* A third objective of research is to explain. A study of this nature will normally be conducted when researchers encounter an issue that is already known and has a description to it, but they are prompted to ask why things are the way they are. Mouton (2001: 54) refers to these as causal questions. Therefore, such a study builds on exploratory and descriptive research, but goes on to identify the reason why something occurs (Kreuger & Neuman 2006: 23). Rubin and Babbie (2005: 126) give valuable advice for distinguishing between exploratory and explanatory objectives by suggesting that the researcher also considers the role of understanding and predicting in the course of the explanatory study. A study seeking to develop an initial understanding of a phenomenon (even though it might include asking respondents "why", or to explain their actions) is more likely to be exploratory. A study, on the other hand, that attempts to test predictions and hypotheses is more likely to be explanatory. Blaikie (2000: 75) states that explanations identify causes of events and the factors or mechanisms that produce them. For this very reason explanatory researchers use only quantitative data. The goal of the research can be either basic or applied.
- *Correlational research.* This is often useful as a first step to explanatory research, or is conducted when explanatory research is not feasible. According to Babbie (2007: 90), correlation is when an actual relationship exists between two variables. Correlation research is, as such, not focused on the cause–effect relationship between variables, but on the importance of the relationship. Although this research is quicker and easier than explanatory research, as it does not involve elaborate designs, it is also quantitative in nature. Once again, the goal can be either basic or applied.

Graziano and Raulin (2000: 150–151) shed more clarity on the nature of correlational research by describing it as follows. In correlational research we measure the strength of a relationship between two or more variables. For example, we may want to know if the self-esteem of adolescents is related to their earlier experiences

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of having been punished by their parents. We can administer a test of self-esteem and a questionnaire to each of the participants about the degree and frequency of their past punishment. By calculating a correlation between the two measures, we can determine to what degree and in what direction the two measures are related.

As in qualitative observation, variables in correlational research are not manipulated. However, there are important differences between correlational and qualitative research. The correlational research design always measures at least two variables, and plans for measuring variables are formalised prior to any actual measurement.

Although a correlation does not imply causality, it does serve two useful functions in science. The first is that any consistent relationship can be used to predict future events. Prediction is possible even if we have no idea why the observed relationship exists. For example, as early as 140 AD, Ptolemy developed a complicated system to predict the movements of the planets. Although his predictions were remarkably accurate, he had little understanding of how the planets actually moved. In fact, his model of planetary movement – that all celestial bodies revolve around the Earth – was, clearly, wrong. But the inaccuracy of his assumptions does not invalidate the accuracy of the predictions that could be made using his system.

A second valuable function of correlational research is to provide data that are either consistent or inconsistent with some scientific theory. A study, correlational or otherwise, cannot prove a theory correct, although it can negate it. For example, the question of what intelligence is and how it should be measured was debated for most of the 20th century. British psychologist Charles Spearman (1904) hypothesised a dominating general intellectual trait, the "g" (general) factor, that governs performance in all areas of cognitive functioning. Spearman's theory can be validated or invalidated by research data. The process of validating a theory requires the scientist to derive predictions from the theory that can then be tested by gathering the appropriate data. One prediction that could be derived from Spearman's "g" factor theory is that there should be a strong correlation between different cognitive abilities, because each ability is affected by the dominant "g" factor. Testing a number of cognitive abilities, such as mathematical and vocabulary skills, and finding the two to be highly correlated does not prove the theory correct, although it does offer some support for it. Testing reading ability, abstract reasoning, short- and long-term memory, and the ability to solve puzzles, and finding that all possible correlations between the results of the measurements are large and positive, still does not prove the theory correct, though it does lend additional support to it. (The reader will probably be reminded of Sheffield and her clients described in Chapter 3.) But suppose the researcher finds that memory and mathematical ability are virtually uncorrelated. What do these data mean? If the procedures were done correctly, we have to conclude that Spearman's "g" factor theory is incorrect. In other words, as in qualitative and case-study research, correlational research cannot prove a theory, though it can negate it.

- *Evaluation research.* Social science methodology can be utilised to assess, among other things, the design, implementation and applicability of social interventions. This type of research is called evaluation research. According to Babbie (2007: 350), evaluation research can, in its simplest sense, be regarded as "the

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process of determining whether a social intervention has produced the intended result". Patton (2002: 10) defines programme evaluation as the systematic collection of information about the activities, characteristics and outcomes of programmes to make judgements about the programme, improve programme effectiveness, and/or inform decisions about future programming. Policies, organisations and personnel can also be evaluated. Evaluation research, quite broadly, can include any effort to judge or enhance human effectiveness through systematic data-based inquiry.

Evaluation research is a form of applied research that can be conducted from a qualitative, quantitative or combined approach. As research with the objective of evaluation has become an increasingly popular and specialised field, many related objectives might be included as part of evaluation research, such as programme evaluation, social indicators research, social impact assessment or empowerment evaluation (Fetterman 2000). A more detailed discussion on evaluation research follows in Chapter 27.

- *Intervention research.* An example of applied research in the social sciences is intervention research, as conceptualised by Rothman and Thomas (1994) and further developed by Fraser et al. (2009). Intervention research is a concept which originally developed from the collaboration between the two pioneers in the field of developmental research, Edwin J. Thomas and Jack Rothman. Here, developmental research denotes the development of a technology, or rather technological item, essential to a profession such as medicine, nursing, psychology or social work. Technology, in this context, consists of all the technical means by which such a profession achieves its objectives (Thomas 1981: 591). Intervention research, as conceptualised here, is targeted to address the application of research in practice. Three main types of intervention research are identified:
  - Empirical research to extend knowledge of human behaviour relating to human service intervention – referred to as intervention knowledge development or KD
  - The means by which the findings from intervention knowledge development research may be linked to and utilised in practical application – referred to as intervention knowledge utilisation or KU
  - Research directed towards developing innovative interventions – referred to as intervention design and development or D&D. This latter form of intervention research is the real offspring of the original intervention research models and will be discussed in more detail in Chapter 28.

Two additional types of intervention research were added by Schilling (1997), namely longitudinal studies that observe what happens to clients during and after their agency contact, and full-scale experiments that test clinical or social change strategies in agency, field and community settings.

These five endeavours have a dual commonality in that they are in the genre of applied research and have a specific intervention mission. As applied research, all five are directed toward shedding light on or providing possible solutions to practical problems.

The distinction between basic or pure research and KD may be difficult to

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draw at times. Rothman and Thomas (1994: 14–15) indicate that KD provides important basic knowledge for understanding aspects of the intervention and for carrying out subsequent D&D. Areas of particular interest in intervention KD include learning more about the relevant target behaviour of potential clients and client systems (e.g. depression, anxiety, substance abuse), relevant intervention behaviour (e.g. therapist warmth, empathy, social support), and the relevant behavioural, social, contextual and environmental conditions (e.g. supportive, organisational and community structures).

- *Action research.* This, according to Kreuger and Neuman (2006: 25), is applied research that treats knowledge as a form of power and dispenses with the line between research and social action. The most prominent characteristics of participatory action research are as follows: those who are being studied participate in the research process; research incorporates popular knowledge; it focuses on empowerment; the research seeks to increase awareness and is tied to political action. Participatory action research can be conducted from a qualitative, quantitative or combined approach, and will be discussed in more detail in Chapter 29.

With the above steps considered, the researcher will now have a research question refined. It is important to remember that a research question is supposed to be a question. It asks what one would like to know, not what is already known or what can be expected. According to Monette et al. (2008: 95), an important part of refining a research question in a quantitative study is conceptual development: identifying and defining the concepts on which the study will focus. These issues will be addressed in Section B. Where the research is more qualitative, the researcher will eventually have to consider the essence of the inquiry in the sense of its ontology and its epistemology in order to be able to formulate research questions sensibly and coherently, and may have to alter the question at a later stage. Or it might mean that the researcher can be less specific about the direction of the research or the route it may take. These issues will be addressed in Section C. Denscombe (2002: 33) warns that even though it might seem inappropriate in some studies to expect precision of purpose, it does not absolve the researcher from the need to spell out in advance a clear agenda and some precise intentions. Most importantly, irrespective of other decisions related to the research question, there must be a clear and definite link between the selected topic, the research question and the goal of the research.

SUMMARY

After the identification of a researchable topic (Phase 1 discussed in Chapter 5), a formal formulation of the researcher's intent with the topic becomes possible. As was previously discussed, the researcher needs to assess the suitability of a research approach early in the process. By doing this, the researcher also (usually subconsciously) keeps the selection of a research approach in mind when the unit of analysis and the research goal are considered. Phase 2 – steps 2 and 3 as discussed above – represents the "thinking" steps or process towards this formulation. The next logical step would be to formulate a proposal as the "doing" step or product of

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SECTION B

this phase. A proposal is the document in which the researcher describes the proposed project in manageable detail with a view to acceptance and/or registration as a postgraduate student, permission to undertake research in a particular practice context and/or obtaining funds from a funding organisation for the proposed research. The composition of this document as a step in the second phase will be discussed in Chapter 7.

Self-evaluation and group discussion

- Compile a table demonstrating the differences between the quantitative and qualitative approaches. Avoid overlapping characteristics.
- Outline the core elements of formulating a research question. Present your formulation to your tutor or study group.

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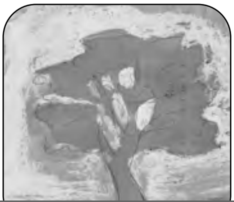

7

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Writing the research proposal

Learning objectives

Studying this chapter should enable the reader to

- gain an understanding of the definition and characteristics of research proposals
- comprehend the basic elements of a research proposal, irrespective of the approach.

1. INTRODUCTION

In the previous chapters it was argued that certain crucial choices have to be made with regard to the selection of a researchable topic, the unit of analysis, the research goals and objectives, and the research approach, in an attempt to formulate the researcher's intent with the proposed project. Having made these selections, he or she is now ready for Phase 2 of the research process, that is, formal formulations, Step 4 – writing a research proposal. In this chapter a definition and the characteristics of research proposals will be reviewed briefly. Thereafter the basic elements of a research proposal will be presented.

2. DEFINITION

A research proposal, as the name suggests, is a document that outlines how the researcher proposes to undertake a research project. According to Kumar (2005: 188), a research proposal is "an overall plan, scheme, structure, and strategy designed to obtain answers to the research questions or problems that constitute your research project". Leedy and Ormrod (2005: 115) note that a research proposal lays out the problem for research, describes exactly how the research will be conducted, and outlines in precise detail the resources – factual and instrumental – the researcher will use to achieve the desired results. The main objective of a research

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proposal, as described by Welman, Kruger and Mitchell (2005: 279–280) is thus to convey the plan in terms of which a proposed research study is going to be carried out clearly and unambiguously ... it represents the blueprint or ground plan for the proposed research. According to Neuman (2000: 477), a research proposal can be regarded as a document that presents a plan for a project to reviewers for evaluation.

As such, the proposal is thus intended to convince the reader that the research holds potential significance and relevance, that the design of the study is sound, and that the researcher is capable of conducting the study successfully. Mouton (2001: 46) agrees that the research proposal should first and foremost be regarded as a project-planning document and that it should express the research logic for the project, but adds that it involves more than this. The proposal is not only a "forward-looking" document, it is also a "backward-looking" document, as it not only outlines the anticipated events, but also documents the effort and thinking up to a particular point.

Punch (2005a: 263) mentions an interesting viewpoint, namely that "the proposal itself is an argument". According to him, the proposal is a document which represents both a report on the early stages of the research and the plan for what will be done subsequently. Seeing it as an argument means stressing its line of reasoning, its internal consistency and the interrelatedness of its different parts. It means making sure that the different parts fit together, and showing how the research will be a piece of disciplined inquiry. As an argument, it should explain the logic behind the proposed study rather than simply describing the study. In so doing, it should answer the question of why this design and method have been chosen for the study.

3. CHARACTERISTICS OF RESEARCH PROPOSALS

The proposal contains elements similar to a research report, but it is written before the research project begins. A proposal describes the research problem and its importance, and gives a detailed account of the methods that will be used and why they are appropriate. According to Bak (2004: 4), a good research proposal will help you to

- define and formulate your research question
- narrow down the study to a manageable form within the prescribed time limits
- structure your writing and the development of the overall argument
- avoid wasting time in the literature search and data collection stages of the project.

In order to write a good proposal, the researcher must take note of three important aspects regarding a proposal, namely the purpose of writing a proposal, the format or layout of the proposal, and the style of the proposal.

3.1 Purpose

The primary purpose of writing a research proposal is to obtain the permission and/or the funds necessary to conduct the study. Proposals are usually submitted to university committees with a view to registering the prospective research project

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for a postgraduate degree (Master's or doctorate), or to a funding body or management with a view to arguing a case for support, be it in terms of resources (such as financial support) or permission, for the research. It should be clear to the reviewers who read a proposal that the study is grounded in theory, methodologically sound and practically organised, and that it will make a meaningful contribution to the knowledge base of the profession and/or deliver measurable outcomes or benefits. In this regard, Punch (2005b: 14) stresses that the form and structure of the proposal are tied to its purpose: to explain and justify the proposed study. In this context, *explain* means that readers can clearly understand what the researcher wants to do. *Justify* means that they not only understand what the researcher plans to do, but why. *The proposed study* means that the proposal should be mainly about the study, not mainly about the literature or the research topic or research methods in general. The nature of the document will determine the emphasis given to justification vs explanation and may in some respects be driven by discipline-specific, funding-specific or organisational-specific demands, including calls for academic rigour, scientific rigour and cost effectiveness.

A research proposal also serves a further purpose. When we are forced to write down precisely what research question we wish to investigate or what specific hypothesis we wish to verify, we clarify the topic in our own minds. When we have to justify our choice of topic with regard to its theoretical basis and the potential relevance of its findings, we gain greater clarity on not only why we wish to conduct this particular study – the proposed outcomes – but also how the proposed study is situated in the larger knowledge pool. We therefore draft a research proposal not only for the benefit of the reviewers, but also for ourselves. We need a plan for conducting a research study in the same way that a builder needs a plan to build a house. Although we need not demonstrate that we have all the answers, we certainly need to demonstrate that we are informed enough about all the factors to be taken into consideration to complete the project successfully and that we can communicate an understanding and a competence for engaging in the proposed study. This is particularly important when the project proposes the use of unconventional or unknown methods, or ventures into unknown territory for the particular discipline, funder or organisation where the proposal will be submitted.

3.2 Format

The way we organise a research proposal – what information we put under which heading – will vary according to the information required. Sometimes both the information and the format are decided by the organisation to which the proposal is submitted. In some simple cases it is necessary only to complete an application form. The format of a proposal and the information it contains vary according to whether the proposal is submitted to an academic committee or to a funding organisation. A proposal for an academic committee is typically more detailed and scholarly than one submitted to a funding organisation. Similarly, different types of funding organisation have varying requirements. For some funding agencies, the researcher in charge of the project (or the principal investigator) should include a curriculum vitae, letters of support from partners in the project, a record of previous research completed, and supporting information on a pilot study conducted or reconnaissance research undertaken. Where the purpose of the proposal is, for

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example, to obtain permission on ethical issues regarding the experimental phase of the project, the document is required to incorporate a great deal of finality on research methodology. In other instances, the document will be aimed more at clarification of the topic, with the assumption that the finer details on methodology will be decided on as the study progresses. It has become common practice, particularly in public-funded research, for the anticipated benefits to be clearly stated.

Neuman (2000: 477) writes that the proposal for quantitative research has most of the parts of a research report: a title, an abstract, a problem statement, a literature review, a methods or design section, and a bibliography. It lacks results, discussion and conclusion sections. The proposal has a plan for data collection and analysis (e.g. types of statistics). It frequently includes a schedule of the steps to be undertaken and an estimate of the time required for each step. Punch (2005b: 15) confirms this view by stating that quantitative research is highly prestructured and preplanned, and the proposal describes that structured plan.

Punch (2005b) notes, however, that proposals for qualitative research are more difficult to write because the research process itself is less structured and preplanned. This does not, however, imply that a proposal for qualitative research may be less rigorous or adhere any less to the expectations of a proposal. Indeed, a proposal for a qualitative study should be equally focused on presenting the proposed study as scientifically justifiable with a clear picture of the manner in which the project is to be conducted. The dilemma for the qualitative researcher, Rubin and Babbie (2001: 114) point out, is "figuring out how to put enough detail about the plan in the proposal to enable potential funders to evaluate the proposal's merits, while remaining true to the unstructured, flexible, inductive qualitative approach". Punch (2005b: 77) suggests the following:

> The writer should indicate early in the document the unfolding nature of the proposed research and why such an approach is appropriate for this study on this topic in this context at this time. The need to preserve flexibility, the unfolding nature of the study, and the ways in which this research will follow a path of discovery can be strongly stated. Against this background, it is good advice to develop likely research questions and issues of design and methods as far as possible in the proposal, indicating what methodological choices will be involved and the basis on which they will be made.

Adding to this, the suggestions of Rubin and Babbie (2001: 114) can be summarised as follows:

- Outline and describe the research plan, but indicate that it is tentative and open to change.
- Specify the qualitative research strategy and the ideas underlying that approach so as to convey to the reader knowledge about the methodology, and justify its flexible nature.
- Ensure that the proposal is well written and that the literature review is adequate.
- Conduct a pilot study on the topic where appropriate and add a description of that study as an appendix to the proposal, especially to demonstrate your competence in data analysis.

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3.3 Style

According to Grinnell and Unrau (2005: 423), a proposal's content and writing style will largely depend on the recipient. In most cases, it is, however, the safest to write formally, using the third person. Mouton (2001: 58–59) gives the following practical guidelines regarding the style of a proposal:

- In general keep sentences simple and short – avoid long, unwieldy, jargon-filled sentences. All words, sentences and paragraphs should be clear, precise and concise.
- Link sentences using a logical flow of ideas rather than using conjunctions.
- Technical terms or jargon should be kept to the minimum. If it becomes necessary to use a word that the reader might not understand, give a brief explanation, either by supplying clues about the meaning of a word throughout the sentence or by placing the definition in brackets.
- A common problem in academic writing is a lack of variation, with writers using the same nouns over and over throughout the text. This soon becomes very monotonous. Make good use of variants and pronouns to ensure that the writing is more interesting.
- A proposal that has many spelling and grammatical errors makes a very poor impression. With the easy availability of spelling and grammar checkers in most word-processing software, it is absolutely essential that your proposal document be neat and error free.
- Another important consideration when constructing the research proposal is the fact of "balance" or "proportion" – meaning the proportional lengths of the main sections of the proposal. Sections that are too long or too short invariably distort the balance of the proposal, and mean that too much or too little information is provided in specific sections. A good proposal is well balanced; it has the right proportions.

In general there are basically three stylistic characteristics common to all research proposals. Proposals should be clearly worded without irrelevant and non-essential information, written in a non-literary style, and clearly organised and well structured. A well-designed research proposal is the road map for "looking ahead" to the next steps in the research process and "looking back" to what has been done and is therefore an essential tool for the successful management of the study.

4. ELEMENTS OF A RESEARCH PROPOSAL

In the literature, there are numerous descriptions of proposals, with different suggestions and recommendations for proposal sections and headings. Different authors suggest different ways to present the material, and different orders the sections can follow. Although there is no fixed formula, there are basic elements incorporated in a proposal and a certain structure or logic that characterises all research proposals.

The elements of research proposals, as discussed in this section, aim to be general enough to suit different social science areas, and to cover quantitative, qualita-

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tive and mixed-method approaches to research. Whether a qualitative study, a quantitative study or a mixed-method approach is proposed, one will probably need to begin with an introduction followed by a discussion on significance. One has to formulate a research problem, goals and objectives, and adhere to criteria for the review of related literature. Regardless of the type of study, an outline of the research methodology and limitations of the study must be included. Other similarities include a project outline on organisational, scheduling and financial matters. Whatever the specific captions to the various subsections may be, readers of the proposal, according to Punch (2005b: 12), will judge the proposal on such questions as the following:

- Is the proposed research feasible and "do-able"?
- Is the research worth doing?
- Can the candidate do it?
- If done, will it produce a successful dissertation (or other outcome intended) at whatever level is involved?

In other words, review committees use the proposal to judge both the viability of the proposed research and the ability of the candidate to conduct the study. It is therefore pivotal to present a well-considered exposition that is scientifically justifiable and also presents a clear picture of the scope of the project and the manner in which it is to be conducted.

For our discussion we synthesise the elements of a proposal according to the views of different authors, namely Babbie (2008), Punch (2005a; 2005b), Grinnell and Unrau (2005), Kumar (2005), Bak (2004), Rubin and Babbie (2001), and Mouton (2001).

4.1 Introduction

As with any introduction, the proposal will start with an overview of the elements to be discussed. Thereafter, this section of the proposal provides a broad overview of the topic, in other words a context for the reader, and, as such, presents a background to and a rationale for the study. A strong and powerful introduction is important to a convincing proposal. According to Punch (2005a: 265), the purpose of the introduction is not to review literature, but rather to show generally how the proposed study fits into what is already known, and to locate it in relation to present knowledge and practice. In the process of doing this, there should be a clear identification of the research area and topic, and a general statement of the purpose of the study. These can lead later into general and specific research questions. It thus provides an introduction to a more detailed discussion of the research questions to be explored in the study. In qualitative research, questions and problems for research most often come from real-world observations, dilemmas and questions. They are not stated as "if-then" hypotheses derived from theory. Rather, they take the form of wide-ranging inquiries reflecting complex situations. Therefore, the introductory part to a qualitative proposal should reflect this.

Various logical structures, when writing the introduction part of the proposal, are possible, but we want to recommend a progression from more general to more

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specific issues, culminating in stating the topic, purpose and research questions for the study. Remember to structure the introduction in such a way that it is not too long.

4.2 Significance of the study

Here, the proposal should indicate the significance of the proposed study. According to Punch (2005b: 74), synonyms for "significance" here might be justification, importance, or contribution of the study. In other words, in this part of the proposal, one takes the opportunity to convince the reader of the value of the proposed research and to indicate that the results of the study will be relevant for people in other settings. Convincing the reader that the study is significant and should be conducted entails building an argument that links the research to larger, important theoretical problems (theoretical significance), significance with respect to social policy, or concerns of practice (practical significance), according to Grinnell and Unrau (2005: 423). In some instances the proposed contribution may be in the methodology, in which case the methodological significance must be discussed. It is possible only to guess about the study's significance and whether or not the problem can be researched effectively and competently, until a thorough discussion of relevant literature builds an argument demonstrating the significance of the proposed study. This second section of the proposal develops such an argument and begins to describe a logical framework for the research. This section generally responds to the following questions: Who has an interest in this domain of enquiry? What do we already know about the topic? What has not been answered adequately in previous research and practice? How will this new research add to knowledge, practice and policy in this area? A research proposal must demonstrate that the research will be useful in three broad respects:

- It must contribute to knowledge – either theoretically or methodologically.
- The relevant practice and/or policy arenas should find usefulness and meaning in the study.
- The study should be useful for the intended target group.

However, the relative emphasis placed on each aspect of the study's significance depends on the study itself. Of course, applicants for grants must adjust their statements about significance to the needs of the funding agencies. The foundation that takes pride in funding action or intervention will need to see more statements about how the proposed research will directly help people or change a problematic situation. On the other hand, when seeking funds from an agency with goals of expanding knowledge and theory, the researcher must emphasise the undeveloped or unsolved theoretical puzzles to be addressed, so as to demonstrate the significance of the research.

In conclusion, the researcher must ensure that this section of the proposal spells out not only the immediate importance, meaningfulness or relevance of the proposed research, but also the longer-term benefits that the results of the study may bring to various target groups of beneficiaries. The contribution that the study can

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make to the development of the theoretical base of the relevant profession should also be stated, as well as any possible contributions to the development of research methodology.

4.3 Research problem, goal and objectives

The formal problem formulation may serve as an effective point of departure for this section of the proposal. The researcher must explicitly delimit the focus of the study and articulate the specific problem he or she wants to investigate. According to Bak (2004: 20), this part captures the essential focus of the study, and therefore it is important that the researcher spends time on formulating a clear, focused and interesting academic problem that is researchable. The researcher should ensure that the problem has been defined specifically enough for the reader to understand what the proposed research study includes and what it leaves out. The researcher thus needs to demonstrate that he or she has been able to demarcate or delimit the area of study. Bak (2004: 20) recommends that the central research problem must be *one problem,* stated in a single sentence, question or hypothesis. According to the author, "if you can't state it this way, it is an indication that you don't as yet have enough focus. You need to demarcate your problem more". To formulate your research problem in the form of a research question is also presented as an option by Mouton (2001: 53).

However, it is important to remember that an exploratory study does not necessarily have a precisely delimited problem statement or precise hypothesis. One purpose of qualitative methods is to discover important questions, processes and relationships, and not to test them. In many qualitative proposals, the problem statements develop logically from the review of the literature. However, this section must at least provide the reader with an overview of the area of inquiry to be developed. Thus, a qualitative proposal might be modified to include a more precise statement of the problem, questions or areas for exploration (derived from the literature review), and a number of guiding hypotheses. This approach should satisfy readers who expect correct problem statements, because it demonstrates that the researcher has a grounding in the area of study and that the research choices flow from a well-developed rationale based on theory and empirical research. It is essential, however, that the researcher explains that guiding hypotheses are merely tools used to generate questions and to search for patterns. Guiding hypotheses may be discarded when the researcher actually enters the field and finds other exciting patterns of phenomena.

In broad terms, Kumar (2005: 192) suggests that this section should focus on issues relating to its central theme, identify the main gaps in the existing body of knowledge, raise some of the main research questions to be answered through the study, and identify what knowledge is available concerning these questions.

The problem statement and research questions culminate eventually into the formulation of the research goal and objectives of the study. The goal of the study indicates the central thrust of the study, and the objectives identify the specific issues the researcher proposes to examine. According to Kumar (2005: 193), the objectives of the study should be clearly stated and specific in nature. Each objective should delineate only one issue.

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4.4 Review of relevant literature

The purpose of this section in the research proposal is, according to Bak (2004: 18), "to establish the theoretical framework for the study, to indicate where the study fits into the broader debates, and thus to justify the significance of your research project against the backdrop of previous research".

Grinnell and Unrau (2005: 424) elaborate by stating that there are four purposes in carrying out a literature review:

- To assure the reviewers that the researcher understands the current issues related to his or her topic
- To point out ways in which the researcher's study is similar to, or different from, other studies that have been previously conducted
- To fit the researcher's study into the jigsaw puzzle of present knowledge
- To introduce and conceptualise the variables (or constructs) that will be used throughout the study

In this section of the proposal the researcher needs to identify the body of literature which is relevant to the research, to indicate the relationship of the proposed study to the relevant literature, and to demonstrate his or her understanding of the main debates in the literature. Relevant questions to ask in this regard will be: What have others said about the topic? What theories address it and what do they say? What previous research exists? What are the most recent findings in the area of study? What gaps and contradictions exist among these findings? What new research questions do these findings suggest? Are there flaws in the body of existing research that needs remedy? What are the interpretations of relevant concepts or issues in the literature and how will they be interpreted in the context of the study?

According to Rubin and Babbie (2001: 115), the literature review in qualitative proposals should perhaps be more extensive than in quantitative proposals in order to demonstrate the investigator's expertise. Punch (2005b: 71) mentions that for some qualitative proposals the literature may be used to sharpen the focus of the study, and to give structure to its questions and design. If so, this should be indicated, along with how it is to be done. However, in both qualitative and quantitative proposals the literature review should be brief enough to avoid tediousness, but extensive enough to inform those who consider the proposal about the topic.

4.5 Research design and research methods

At this point, the overall approach to be taken in the research – quantitative, qualitative or mixed method – becomes decisive. Whichever approach applies, the proposal should describe the study design/s the researcher plans to use to answer the research question as well as a rationale for the choice of the design (e.g. say whether it is a case study, cross-sectional survey, experimental design or combination of designs). The researcher should include details about the various logistical procedures that he or she intends to follow while executing the study design. Kumar (2005: 195) emphasises that one characteristic of a good study design is that

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it explains the details with such clarity that, if someone else wanted to follow the proposed procedure, he or she would be able to do exactly as the researcher had done.

The proposal must include information on the population and sample involved. Kumar (2005: 195) states in this regard that this part of a research proposal provides an answer to the questions: Who makes up the study population? Can each element of the study population be identified? If yes, how will this be done? Will a sample or the total population be studied? If a sample is selected, how will this be done? Usually the description of the population is not long or detailed. Armed with information from earlier parts of the proposal, reviewers often determine what the population will be prior to reaching this section of the proposal. Nevertheless, since research studies are usually undertaken in order to generalise to larger populations rather than to make statements about samples, a succinct statement describing the population is needed. The population is differentiated from the study's sample. This component of the proposal describes in detail the size and nature of the sample, the strategy for selecting it, as well as a rationale for the appropriateness of the sampling technique.

This section of the proposal also includes a description of the specific methods or instruments which will be used for data collection, and the procedures for administering the instruments or, more generally, for collecting the data. The researcher must also give a justification for using the specific data collection method. When original measuring instruments are to be constructed for a quantitative study, the prospective researcher must give a detailed account of the procedures to be employed in constructing them. He or she must also discuss the pre-testing procedures involved as well as the validity and reliability of the completed instruments. When existing measuring instruments are to be utilised, their validity and reliability must also be discussed. If a qualitative study proposes to use instruments (e.g. observation schedules, structured interviews), the same comments apply. According to Punch (2005a: 267), for both quantitative and qualitative studies, the procedures proposed for data collection should be clearly described, and the description should show why these data collection activities have been chosen. Possible threats to the validity of data can also be indicated here.

Finally, the researcher must detail ethical considerations or any other factors that may result in problems in obtaining access to data, and discuss the steps to be taken to overcome them. The researcher also needs to describe the procedures that will be followed to analyse the data, and give an indication as to whether the data will be analysed manually or by computer. For computer analysis, the researcher should identify the program and the statistical procedures to be performed on the data – this involves detailing each specific procedure to be employed for each general research question to be answered or specific hypothesis to be tested. There are, of course, also many situations where the use of statistical analysis is not only impossible but also inappropriate. In these cases the researcher must also describe the qualitative data analysis procedures that he or she intends to implement.

The researcher should eventually include his or her own assessment of the generalisability of the study's findings, the reasoning behind this assessment, and a discussion of limitations in generalising from the sample back to the larger population from which the sample is drawn.

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4.6 Limitations

Potential limitations are often numerous even in the most carefully planned research study and it is important that they be listed in the proposal. Generally, when identifying limitations, researchers must consider the validity and reliability of all data collection instruments, the generalisability of the sample to the population from which it was drawn, access to data, ethical problems, and the ability to control extraneous factors in the environment and in respondents. Although problems are never completely eliminated from any study in the caring professions, researchers must spell out the various means by which they try to limit problems. Finally, they must detail the specific steps they will propose to ensure that the sample is as representative as possible of the population from which it is drawn.

4.7 Project outline

All proposals should address the resources that are available and that are needed to carry out the study. All studies must develop organisational, work and financial plans. The majority of funding organisations specify that these three plans be addressed as separate components of the proposal. Although it is useful to consider them separately in determining which resources are available and which are necessary to execute the study, all three areas involve the consideration of basic resources and can be seen as one component.

- *Organisational plan.* The following questions need to be addressed in this section of the proposal: Which organisation, department or departmental sub-unit will assume administrative responsibility for the study? Where will the project be physically accommodated? What personnel are needed to carry out the study? What are their specific responsibilities? What should their qualifications be? What provision has been made for access to specialised facilities (e.g. computer time)? Answering these questions provides an organisational chart that illustrates the proposed study's organisational context, the personnel to be employed, and the flow of authority that connects them.

- *Work plan and time schedule.* In developing a work plan, the researcher must identify the sequence of activities necessary to execute the study, the persons responsible for carrying out each activity, and the anticipated dates for commencing and completing each one. Lead times for developing the research operation, data analysis and report preparation are usually underestimated.

- *Financial planning.* The administration component translates the work plan into monetary terms by providing a detailed budget. The budget identifies the resources required to accomplish the activities described in the work plan and estimates the cost of each one. Line-item budgets show exactly what amount of money will be needed for each activity. Both capital and running costs must be outlined. Rubin and Babbie (2001) add that even in the case of a more modest project that the researcher him- or herself will fund (e.g. for an academic qualification), expenses should be anticipated.

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SECTION B

SUMMARY

This chapter offers broad guidelines on the compilation of a research proposal. Prospective researchers who carefully review this chapter and use it as a master plan for writing out their research proposal should find that most essential requirements have been met. Researchers should simply ignore those aspects not applicable to their situation. However, it is important to bear in mind that a good research proposal is an excellent working document that can be used to refine and finalise the first chapter of a postgraduate student's dissertation or thesis in those cases where the research forms part of a postgraduate degree.

The value and importance of a research proposal is strikingly described by Leedy and Ormrod (2005: 115) as follows:

> Research is never a solo flight, an individual excursion. It begins by researchers communicating their thoughts, plans, methods, and objectives for others to read, discuss, and act upon. The mechanism that begins such a research dialogue is the research proposal. As a point of departure, it must be a precision instrument from the first word to the last.

Self-evaluation and group discussion

- Briefly explain the purpose of a research proposal as both a process and a product.
- Highlight the differences between proposals for a qualitative vs a quantitative study.

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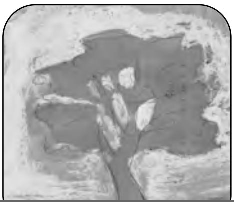

8

H STRYDOM

Ethical aspects of research in the social sciences and human service professions

Learning objectives

Studying this chapter should enable the reader to

- view some concepts salient to the theme of ethics in research
- discover a few important issues with regard to ethics in professional research
- gain a perspective on the importance of the role of ethics committees as well as a professional code of ethics
- consider the question of ethical decision making in a responsible manner.

1. INTRODUCTION

Research should be based on mutual trust, acceptance, cooperation, promises and well-accepted conventions and expectations between all parties involved in a research project. On this basis, relatively few limitations and many options for action are available which offer the best opportunities for answering research questions and contributing to society (Sarantakos 2000: 20–21). Practice has, however, shown that this freedom can have adverse effects on participants and the community in general.

The fact that human beings are the objects of study in the social sciences brings unique ethical problems to the fore which would never be relevant in the pure, clinical laboratory setting of the natural sciences. For researchers in the social sciences, the ethical issues are pervasive and complex, since data should never be obtained at the expense of human beings. However, those other sciences struggle with another set of ethical dilemmas that they are obliged to address.

Until recently, professional ethics and conduct have for the most part been ignored in, for example, social work theory and practice. However, caring professions increasingly realise that the recognition and handling of ethical aspects are

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imperative if successful practice and research are the goal. Consequently, professional ethics are also becoming more visible in the curricula of training institutions. Researchers have two basic categories of ethical responsibility: responsibility to those, both human and nonhuman, who participate in a project; and responsibility to the discipline of science to be accurate and honest in the reporting of their research (Gravetter & Forzano 2003: 60).

Researchers will never agree on precisely what is wrong and what is right as far as ethical issues in research is concerned. However, the mere fact that they can talk about their differences in opinion sets the stage for discussion (Yates 2004: 159). Anyone involved in research needs to be aware of the general agreement about what is proper and improper in scientific research (Babbie 2001: 470). Too often ethical lapses take place in research studies, such as the faking of interview data, inaccurate reporting of results or bias shown in favour of the researcher's hypothesis. Controversial findings are occasionally released before the results have been thoroughly examined and later turn out to be incorrect; procedures are followed with research subjects without informed consent; or the researcher is paid by an organisation whose involvement suggests a conflict of interest (Glicken 2003: 237).

Researchers sometimes tend to relate to respondents from a position of superior expertise and status, and think that the respondents do not need to be fully informed about the research goals, the process or the outcomes. This chapter commences with a discussion of one or two salient concepts, followed by an explication of a variety of ethical issues, each accompanied by a distinct stance taken, which represent ethical principles that we consider of the utmost importance. In this discussion on codes of ethics, an attempt is made to help researchers make the most ethically responsible decisions by spelling out some of the pitfalls involved, and offering some firm guidelines on the relevant ethical principles.

2. SOME SALIENT CONCEPTS

The concepts of ethics, values, morality, community standards, laws and professionalism differ from one another without necessarily being mutually exclusive. The term *ethics* implies preferences that influence behaviour in human relations, conforming to a code of principles, the rules of conduct, the responsibility of the researcher and the standards of conduct of a given profession (Babbie 2007: 62; Bless, Higson-Smith & Kagee 2006: 140; Monette, Sullivan & DeJong 2005: 49; Walliman 2006: 148). Values indicate what is good and desirable, while both ethics and morality deal with matters of right and wrong (Babbie 2001: 470). It is also possible to act unprofessionally without necessarily being unethical. To be late for an appointment, for example, is unprofessional, but not necessarily unethical.

Different authors stress more or less the same aspects when describing the concepts of ethics. In summary, we offer the following definition of ethics: Ethics is a set of moral principles which is suggested by an individual or group, is subsequently widely accepted, and which offers rules and behavioural expectations about the most correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants and students.

Ethical guidelines also serve as standards, and a basis upon which each researcher ought to evaluate his or her own conduct. As such, this is an aspect

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which should be borne in mind continuously. Ethical principles should thus be internalised in the personality of the researcher to such an extent that ethically guided decision making and the humane and sensitive treatment of participants become part of the total lifestyle (Bless et al. 2006: 140; Corey, Corey & Callanan 1993: 3–4).

3. SOME ETHICAL ISSUES

The following classification of ethical issues makes no claim to comprehensiveness. Grouping together some aspects merely reflects the preference of the author. For the purpose of this chapter the following ethical issues are identified: harm to experimental subjects and/or respondents, voluntary participation, informed consent, deception of subjects and/or respondents, violation of privacy/anonymity/confidentiality, denial of treatment, compensation, debriefing of participants, actions and competence of researchers, cooperation with contributors and sponsors, and release or publication of the findings.

3.1 Avoidance of harm

The fundamental ethical rule of social research is that it must bring no harm to participants (Babbie 2007: 27). Subjects can be harmed in a physical and/or emotional manner. One may accept that harm to respondents in the social sciences will be mainly of an emotional nature, although physical injury cannot be ruled out completely. Everything we do in life can possibly harm someone and therefore researchers should weigh the risks against the importance and possible benefits of the specific research project (Babbie 2007: 27). The researcher has an ethical obligation to protect participants within all possible reasonable limits from any form of physical discomfort that may emerge from the research project (Creswell 2003: 64). Emotional harm to subjects is often more difficult to predict and to determine than physical discomfort, but often has more far-reaching consequences for respondents.

The responsibility for protecting respondents against harm reaches further than mere efforts to repair, or attempt to minimise, such harm afterwards. Respondents should be thoroughly informed beforehand about the potential impact of the investigation. Such information offers the respondents the opportunity to withdraw from the investigation if they so wish. Researchers should also identify respondents who could possibly prove vulnerable during the investigation in order that they may be eliminated from the study beforehand. In some cases, negative effects, of a more negative nature than any anticipated harm of the research project, exist in respondents' everyday, natural situation (Bailey 1994: 457–458). In these cases it is surely justified that respondents suffer a certain degree of discomfort in order eventually to better their circumstances.

Participants may experience concrete harm, for instance with regard to their family life, relationships or employment situation. Researchers often learn private details from participants such as deviant behaviour, opinions that they consider to be unpopular or characteristics that might seem demeaning, like low income, which are sometimes only known to the participant and the researcher and therefore places a commitment on the researcher to keep the information anonymous (Babbie

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2007: 27, 63). These rich and detailed data are especially true of qualitative research and special care should be taken to work in an ethical manner (Silverman 2000: 201). The fact that negative behaviour of the past might be recalled to memory during the investigation could be the beginning of renewed personal harassment or embarrassment. For this reason, researchers should have the firmest of scientific grounds if they extract sensitive and personal information from subjects. Unless such information is crucial for the research goals, it should not be included in the measuring instrument.

The term *beneficence* is often understood as an obligation (Grinnell & Unrau 2008: 36) to maximise possible benefits and to minimise possible harm. We need to remember, however, that the discomfort that may arise from being involved in the investigation is often minimal in comparison with comparable situations in real life. Researchers are perhaps sometimes overly sensitive to harm that could be done to subjects. Monette et al. (2005: 60) point out that a research project may even have positive effects on the respondents and, similarly, it may take years before any beneficial effects are seen. Possible harm to subjects should, however, not be rationalised by saying that the study might benefit them in some other way.

It is also difficult to establish at all times whether any degree of harm will come to subjects. All possible situations that may arise during an investigation cannot be foreseen and ruled out beforehand. We take the firm stance in this book, however, that researchers are ethically obliged to change the nature of their research rather than expose their respondents to the faintest possibility of physical and/or emotional harm of which they may be aware.

Ritchie and Lewis (2003: 70) touch on another issue, namely the harm that can be done to researchers and the risks that they might face when negotiating the gaining of permission to enter an unknown field, doing field work or travelling to appointments. The assessment of all possible risks should be negotiated during the planning phase of the study (Ritchie & Lewis 2003: 70). This will, however, not make provision for any unforeseen circumstances that might crop up during the main investigation. Arrangements to protect researchers from harm have cost implications which should be considered by researchers and sponsors, and should be taken into consideration at an early stage of the study (Ritchie & Lewis 2003: 71).

3.2 Voluntary participation

Participation should at all times be voluntary and no one should be forced to participate in a project (Rubin & Babbie 2005: 71). It is, however, not always as simple as this and when, for instance, observing a public demonstration or people relaxing in a park, surely no permission is required. On the other hand, when a researcher joins a certain club only for research purposes the people being observed have not really volunteered to participate in the project. If, however, the researcher does ask for participants' permission in the study, the results will be contaminated in the sense that participants will act differently if they know what is being studied. Some researchers say that participants should be told what is being studied without giving too much detail about the aim of the study. Too much detail is again a very wide term and can be interpreted in many ways (Babbie 2007: 26–27).

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Even if participants are told that their participation is voluntary, they might still think that they are somehow obliged to participate. For instance, when students are asked to complete a questionnaire as part of their lecturer's research project and the principle of voluntary participation is fully explained, they might still think that non-participation in the project might affect their marks or might disadvantage them in one or another way (Babbie 2007: 63).

3.3 Informed consent

Respect for persons requires that subjects be given the opportunity to choose what shall or shall not happen to them (Grinnell & Unrau 2008: 37). Obtaining informed consent implies that all possible or adequate information on the goal of the investigation; the expected duration of the participant's involvement; the procedures which will be followed during the investigation; the possible advantages, disadvantages and dangers to which respondents may be exposed; as well as the credibility of the researcher, be rendered to potential subjects or their legal representatives (Royse 2004: 52–54; Williams, Tutty & Grinnell 1995: 30). Increasingly, voluntary participation and no harm to participants have become formalised in the concept of informed consent (Babbie 2007: 64).

Written informed consent becomes a necessary condition rather than a luxury or an impediment (Hakim 2000: 143). Emphasis must be placed on accurate and complete information, so that subjects will fully comprehend the details of the investigation and consequently be able to make a voluntary, thoroughly reasoned decision about their possible participation. The researcher or the manager of the research project should make sure that the signed consent forms are treated with the utmost discretion and stored away in the correct manner so that a particular form can easily be found if need be – the researcher remains responsible for the ethical quality of the study (Henning 2005: 73–74).

Patton (2002: 407) suggests that before the interview or during the opening of the discussion it should be communicated to participants that the information is important and the reasons for that importance, and the willingness of the interviewer to explain the purpose of the interview should be clear. Participants must be legally and psychologically competent to give consent and they must be aware that they would be at liberty to withdraw from the investigation at any time (Babbie & Mouton 2001: 382; Congress & Lynn 1994: 110; Corey et al. 1993: 229; Grinnell & Unrau 2005: 37).

Nobody should ever be coerced into participating in a research project, because participation must always be voluntary (Neuman 2003: 124). Babbie (2001: 470) and Thomas and Smith (2003: 21) call informed consent voluntary participation and add that it is often hard to follow. For valid reasons subjects are sometimes not informed that they are part of a research project. Sometimes it is impossible or impractical to inform them, as providing such information would cause subjects to act unnaturally, which, in turn, would influence the results (Bryman 2000: 112–113). When subjects are involved without their consent, their right to self-determination is impaired and this should be avoided at all costs. This principle causes a value conflict between the researcher's assignment to broaden knowledge and his or her responsibility to protect participants.

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The term *adequate information* may be viewed as a vague term, but it seeks to assess the demands that the project will make upon respondents in terms of time, activities and disclosure of confidential information. There must be adequate opportunity for subjects to ask questions before the study commences, as well as during the investigation. Subjects may decide to participate for various reasons. Some of the most important reasons may be fear of victimisation (if they do not participate) or the prospect of payment for participation. Persons with a lower status and less power than the researcher, such as children, prisoners and psychiatric patients, may feel compelled to participate, or consider participation as a way of handling boredom or of receiving certain privileges. Subjects may sometimes feel morally obliged to furnish even extremely personal information because they want to retain the researcher's goodwill. The researcher must remain continually aware of these hidden agendas and respect the freedom of potential participants to decide for themselves.

We live in a time that has seen a sustained increase in public concern over coercion and victimisation of the powerless by the powerful. Science is associated with power, and therefore some of these issues have focused on the scientific research community. Complete or partial coercion to participate in research occurs either as a result of the power of institutions and organisations over individuals or as a result of the use of incentives too strong for the potential participant to reject.

Situations differ from one another; therefore it is important to develop an appropriate, informed procedure of consent for each investigation. Ethical guidelines about informed consent cannot anticipate all possible problems. The researcher must handle unforeseen situations in the most ethical manner possible. Some authors are of the opinion that informed consent can also be carried too far. They feel that in investigations where respondents will not be subjected to any harm or discomfort, where they remain anonymous and personal matters of a less serious nature are revealed, it should not really be necessary to obtain formal informed consent.

On the other hand, informed consent remains necessary even if the subjects do not listen to the researcher's explanation or are not really interested in knowing. The researcher remains obligated at all times to give a complete explanation of the total investigation, without pressure or unnecessary interference, in clear and intelligible language. Informed consent ensures the full knowledge and cooperation of subjects, while also resolving, or at least relieving, any possible tension, aggression, resistance or insecurity in the subjects. It is not always only the informed consent of the participant or the guardian of the participant that is needed, but also the informed consent of persons in authority such as the tribal chief or the head of an institution (Yates 2004: 160). This often involves writing letters that identify the organisation and the researchers that want to embark on the project, the extent of the time involved, the potential impact and the outcomes of the study (Creswell 2003: 65).

3.4 Deception of subjects and/or respondents

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Deception refers to misleading participants, deliberately misrepresenting facts or withholding information from participants (Struwig & Stead 2001: 69). According to

Corey et al. (1993: 230), deception involves withholding information, or offering incorrect information in order to ensure the participation of subjects when they would otherwise possibly have refused it. Neuman (2000: 229) says that deception occurs when the researcher intentionally misleads subjects by way of written or verbal instructions, the actions of other people, or certain aspects of the setting.

Thyer (2001: 439) adds that social scientists may sometimes feel that some degree of deception might be necessary in order to generate meaningful research information. However, for some people some degree of deception might mean total deception; it is thus hard to define some degree of deception. Misrepresenting research purposes is common, especially in the case of small qualitative projects. Deception is, however, hardly needed in large quantitative surveys (Bailey 1994: 463). Babbie (2001: 474) says that although it is difficult to conceal the fact that one is doing research, it is normally simple and appropriate to hide one's purpose. Deception within social research needs to be justified by compelling scientific or administrative concerns and nothing else (Babbie 2007: 67).

However, a distinction can be drawn between deliberate deception and deception of which the researcher was not aware, or which may later have crept into the investigation unwittingly. When such unforeseen developments do occur – and, according to some authors, such incidents occur during most investigations – they cannot be explained to subjects beforehand. In such cases the incidents must be discussed with the respondents immediately after or during the debriefing interview. It is our firm opinion that no form of deception should ever be inflicted on respondents. If this happens inadvertently, it must be rectified immediately after or during the debriefing interview.

3.5 Violation of privacy/anonymity/confidentiality

For the purposes of this chapter, violation of privacy, the right to self-determination and confidentiality can be viewed as being synonymous. Privacy, in its most basic meaning, is to keep to oneself that which is normally not intended for others to observe or analyse. Every individual has the right to privacy and it is his or her right to decide when, where, to whom and to what extent his or her attitudes, beliefs and behaviour will be revealed. This principle can be violated in a variety of ways, and it is imperative that researchers be reminded of the importance of safeguarding the privacy and identity of respondents, and to act with the necessary sensitivity where the privacy of subjects is relevant (Yegidis & Weinbach 1996: 34). Participants should be informed of all possible limits to this principle as well as the steps that will be taken to ensure that no breach of this principle will take place (Morris 2006: 246).

Privacy implies the element of personal privacy, while confidentiality indicates the handling of information in a confidential manner. Confidentiality can be viewed as a continuation of privacy, which refers to agreements between persons that limit others' access to private information. The right to self-determination implies that individuals have the right and competence to evaluate available information, weigh alternatives against one another and make their own decisions. The privacy of subjects can be affected by using hidden apparatus such as video cameras, one-way mirrors and microphones. Some authors believe that if subjects remain anonymous

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and are not exposed to risks, it could be acceptable to use these kinds of concealed media. Individuals also differ markedly on how privately they want their personal information to be handled. Some forms of behaviour, such as sexual behaviour and illegal activities, are areas which almost everyone will consider private, and that subjects will expect researchers to protect their right to privacy by means of confidentiality. The term *anonymous* should never be used to mean "confidential" (Babbie 2007: 65).

Information given anonymously ensures the privacy of subjects. Researchers sometimes assure subjects of anonymity in their covering letters or by verbal communication, but secretly mark the questionnaires. It is often necessary that respondents be identified, for instance when reminders have to be sent to persons who have not responded, or follow-up interviews have to be conducted with certain respondents. The ethical issue becomes relevant when subjects are assured of anonymity while the researcher knows that this will not be the case.

Babbie (2001: 472) distinguishes between anonymity and confidentiality, and believes that confidentiality implies that only the researcher and possibly a few members of his or her staff should be aware of the identity of participants, and that the staff should also have made a commitment with regard to confidentiality. Such confidential information is viewed by Robinson (1991: 280) as privileged. Anonymity means that no one, including the researcher, should be able to identify any subject afterwards.

The privacy of subjects can also be ensured when proper, scientific sampling is used. This ensures that no subject is involved in the investigation merely because the researcher knows, or does not know, the person, or because it is merely convenient for the researcher to involve certain persons, or to exclude them. The research report should also preferably use averages instead of, for instance, releasing information about individuals which may be identifiable by the researcher or others. The invasion of privacy should be kept to the absolute minimum and can include certain data-collection procedures such as participatory observation; hidden observation and reporting about it; questionnaires about intimate, personal matters; certain indirect tests where subjects are not aware of what it is that they reveal; and procedures in which information is obtained from third parties.

Often requests are received from institutions, data banks, professional organisations or other third parties to be given access to the data collected. Such requests can create serious ethical problems concerning privacy, and must be carefully accounted for beforehand and documented by way of formal contracting. Further analysis of data by such third parties can, however, sometimes be most advantageous to both the research community and the broader community.

Requests for information from third parties create certain role conflicts for a social worker, because a social worker is legally obliged to keep all information confidential, but on the other hand he or she realises that the information could be beneficial to the entire community. Confidentiality places a strong obligation on social workers to guard jealously the information that is confided to them. This applies to all the caring professions. The obligation rests with the professional in any event, whether the client or patient has specifically requested confidentiality or not.

The more sensitive the information or the more concealed the manner in which the information was gathered, the greater the responsibility of the researcher and

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all concerned to treat the information as extremely confidential (Huysamen 1993: 190). Some authors feel that many matters in the social sciences, if not most, could never have been researched if the privacy of subjects had not been encroached upon to some degree. We take the following stance on this matter:

- Under no circumstances whatsoever do we condone the use of concealed media such as video cameras, one-way mirrors or microphones, without the knowledge and (preferably written) consent of the research respondents.
- All possible means of protecting the privacy of respondents should be applied.
- We concur that many matters in the social sciences, if not most, could never have been researched if the privacy of subjects had not been encroached upon to some degree.

Therefore we feel that in all cases this aspect must be negotiated with the respondents, their cooperation respectfully requested, and the importance of the research carefully explained; refusal of consent, however, must be accepted and respected.

3.6 Denial of treatment

Some researchers think that experimental research may be unethical because the control group will be denied services (Mitchell & Jolley 2001: 201). It would indeed be unethical to deny beneficial services to clients strictly for the purpose of research. The NASW Code of Ethics states that caring professions should take appropriate steps to ensure that all participants have access to some sort of service (Marlow 2005: 105). There are, however, ways to obtain control groups without being unethical, such as comparing a group of clients receiving the experimental intervention against those who receive the normal services or another programme, or to do the experiment and afterwards repeat the programme for the control group (Royse 2004: 58). There are more innovative ways of combating the problem of denial of treatment and this should never be an obstacle to doing cutting-edge research.

3.7 Compensation

It can indeed be asked whether compensating clients in one or other way is unethical. It seems reasonable to reimburse participants for costs incurred such as time away from work, free time spent on the project or transportation. However, when large amounts of money are involved by way of compensating clients, questions can be asked about the ethical issue regarding this. People might only want to participate in the study due to the compensation and therefore the aim of the study might be compromised. If one thinks of poor people being offered money, it might change the process and the scope of the total study and participants might fabricate information in order to be included in the study (Royse 2004: 59).

It is, however, not a wrong practice to compensate participants financially in, especially, longitudinal studies over several years in order to keep them involved in all the follow-ups. In some research projects participants are given a food parcel in order to compensate them for walking long distances to get to the research venue.

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In others, participants are offered a meal as compensation because they have no food at home or had to leave home too early to eat. The main issue regarding compensation is surely the fact that the incentive should not be the only reason that participants take part in the study.

3.8 Debriefing of participants

Debriefing sessions are sessions during which subjects get the opportunity, after the study, to work through their experience and its aftermath, and where they can have their questions answered and misconceptions removed (McBurney 2001: 60). Being taken through a directed and reflective process, especially in qualitative research, affects the persons involved and they discover things about themselves that they did not know before (Patton 2002: 405). Through debriefing, problems generated by the research experience can be corrected (Babbie 2001: 475). The easiest way to debrief participants is to discuss their feelings about the project immediately after the session or to send a newsletter telling them the basic intent or results of the study (Salkind 2000: 38).

After completion of the project, the researcher has to rectify any misperceptions that may have arisen in the minds of participants. Such interviews can be described as a procedure by which any relevant information about the project that has been withheld and misrepresented is made known to participants. If the researcher is not able or does not have the time to give the necessary attention to participants afterwards, participants should be referred to an appropriate source for counselling (Bless et al. 2006: 143).

In some situations where a qualitative approach is utilised, the problem can sometimes arise that subjects benefit and get involved in the therapy or research to such an extent that they may suffer harm on completion of the programme. In such cases termination and withdrawal of the therapy must be handled with the utmost sensitivity.

A research project must always be a learning experience for both participants and researchers. Debriefing sessions are the ideal time to complete the learning experience that began with agreeing to participate. Apart from the experience which participants and researchers gain from the project, the overall goal of research, namely to serve the community, must always be borne in mind. Debriefing interviews must take place in a supportive or a therapeutic context rather than in a brief and threatening laboratory confrontation. The following is a summary of the process:

- Debriefing sessions after the study, during which subjects get the opportunity to work through their experience and its aftermath, are one way in which researchers can assist subjects in minimising possible harm which may have been done in spite of all their precautions against it.
- Researchers must rectify any misperceptions that may have arisen in the minds of participants after completion of the project.
- Termination and withdrawal of the therapy must be handled with the utmost sensitivity in cases where subjects benefited from the therapeutic aspect of the research.

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3.9 Actions and competence of researchers

Researchers are ethically obliged to ensure that they are competent, honest and adequately skilled to undertake the proposed investigation (Walliman 2006: 148). When sensitive investigations are involved, this requirement is even more important. Even well-intentioned and well-planned research can fail or can produce invalid results if the researchers and/or fieldworkers are not adequately qualified and equipped, and if there is not adequate supervision of the project. Negative findings, for example that two variables are not related as was initially thought and even given as hypothesis, should also be reported (Babbie 2007: 69). Babbie (2007: 69) explains that science progresses through honesty and openness, while ego defences and deception retard it.

The entire research project must run its course in an ethically correct manner. The researcher's self-presentation in the initial contact and interviewing is essential in order to gain cooperation from everyone involved in the project (Yates 2004: 161). In the initial reasoned proposal for the investigation, the researcher should clarify the reasons for the study and indicate in what manner he or she will be able to honour ethical guidelines. From the composition of the research population, the sampling procedure, the methodology utilised and the processing of the data, to the writing of the research report, the researcher should constantly be aware of his or her ethical responsibility. Even when the data have been analysed and are no longer needed, a suitable time and method for disposal should be executed in conjunction with the decisions made earlier on with the participants (Walliman 2006: 159).

Plagiarism, meaning directly copying the work or using the ideas of others without acknowledging the source, should also be mentioned in this context, as should manipulating or creating false data (Druckman 2005: 16; Welman et al. 2005: 182). Internet sources are valuable in assisting with tracking information on almost any topic, but the credentials of the website must be properly screened for validity and reliability before such a source can be used (Struwig & Stead 2001: 70).

DePoy and Gilson (2008: 138) mention the effects of research resources wrongly spent, and state that accountability for expenditures of human and non-human resources is the ethical responsibility of all researchers. The results of research gained at high cost, such as time, effort and resources, should always be implemented in future plans for helping the community or implementing programmes for the benefit of a particular population (Unrau, Gabor & Grinnell, 2007: 392).

In social work and the other helping professions, experimental research is conducted in some contexts where a pre-test, an intervention and a post-test are involved. Apart from the normal situation in qualitative research, the onus is also on the researcher to deal ethically not only with the research results, but also with the therapy. The recent tendency for social workers to undertake their own research and view their own caseload as a research project in reality merges two sets of ethical rules. The practitioner–researcher paradigm, now known as the scientist-practitioner model, is increasingly attracting the attention of the social work profession.

At present, much research is being undertaken in South Africa across cultural boundaries. In the past there was very little contact between the different cultural

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SECTION
B

groups, which meant that people did not know and respect one another's cultural customs and norms. Objectivity and restraint in making value judgements are part of the equipment of a competent researcher. Researchers must make a thorough study and become sensitively aware beforehand of the values, norms and climate which exist in a community before the research project can commence at all. Professionals in the caring professions are trained not to impress their own personal value systems on clients or patients. They must refrain from value judgements about the points of view and actions of subjects, even if they conflict directly with those of the researcher.

Professional researchers must respect the customs of the particular community in all their actions in order to obtain proper cooperation from the community. The increasing utilisation of participatory action research is an exciting way in which this ethical issue can be handled in future. Utilisation of scarce resources in research is an ethical issue that influences the researcher directly. Selection of one procedure merely because funds are lacking for another procedure, or selection of one way of sampling because funds are not available for another method, is a dilemma that researchers have to handle with discretion.

Well-equipped researchers should evaluate all possible risks and advantages of the investigation, and must assume responsibility for honouring promises made to the subjects. Ethically correct actions and attitudes for every specific research project should be considered under all circumstances by competent researchers, and should be part and parcel of their equipment in their work. The following should be noted:

- An ethical obligation rests on researchers to ensure that they are competent and adequately skilled to undertake the investigation they have in mind.
- Where sensitive investigations are involved, such as research across cultural boundaries, this requirement is even more important.
- Under no circumstances whatsoever should value judgements be made on the cultural aspects of communities.

3.10 Cooperation with contributors and sponsors

Contributors are normally the colleagues and students that participate in the research process, whether it be as equal partners who will also be named as authors or people who only contributed, for instance, towards entry into the field or data gathering, and who will only be acknowledged in the publication. Sponsors, on the other hand, are normally organisations that contribute financially towards the project and can be research boards or private business enterprises. Everybody that is involved in the research endeavour should be included in a properly written agreement between the parties involved (Monette et al. 2005: 62). The task of research boards such as the National Research Foundation (NRF) is to support researchers financially, and they have to apply for these funds under certain conditions. Private businesses normally ask researchers to do a certain project for them, such as proving the quality of their product in order to increase sales.

In their relations with sponsors of research, scientists should be honest about their qualifications, capabilities and aims for the project, and are obliged to reflect

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earnestly on the purposes of the sponsors in order not to have conflicts of opinion regarding the proposed project (Babbie & Mouton 2001: 528). Honest researchers do not hesitate to acknowledge their indebtedness to others (Leedy & Ormrod 2005: 102). Researchers also have ethical obligations towards their colleagues in the field, which concern the analysis of data and the way the results are reported (Babbie 2007: 69).

Research projects are often so expensive and comprehensive that researchers cannot handle them financially, and in terms of time, on their own. Consequently, a sponsor may be required. The relationship between the researcher and the sponsor can also sometimes raise ethical issues, for instance when the sponsor acts prescriptively towards the researcher, when the identity of the sponsor of the study remains undisclosed, when the researcher does not disclose the real findings in compliance with the expectations of the sponsor, or when the real goal of the investigation is camouflaged.

Colleagues are sometimes formally or informally involved in the research project. Often they assist only in selecting a relevant problem, drawing the most suitable sampling frame, or even simply deciding which research design would be most suitable. Sometimes collaborators can be involved on a full-scale basis, for instance when two or three researchers assume equal responsibility for the entire project. Whatever the extent of involvement of each researcher, a formal contract between participants is preferable, merely because everyone then knows what everyone else's role in the overall project comprises. A formal contract avoids any misunderstanding about participants' involvement at any stage of the project.

The extent to which acknowledgement is given to each participant's contribution deserves careful consideration. Shared authorship and research credits with contributors become an aspect that increasingly has ethical implications. Researchers should not list authors in their report without their permission, should not attribute work to persons who have not contributed and should acknowledge work done by students, trainees and associates (Sarantakos 2000: 24). The ideal is to determine the amount of effort put into the study, or the contribution made by each person who has worked on it. Co-authors should hold discussions in which each one's contribution is considered, and then decide collectively on the stake that each should receive.

All participants should be involved in the planning of a project before their names are mentioned in the report in order to ensure, for instance, correct spelling and furnishing of identifying details. It must be ensured, therefore, that every participant is satisfied with his or her share in the project so that nobody feels dissatisfied at a later stage. The careful attention paid to the cooperation and assistance of others is very important in order to make sure that each project is conducted in an ethically correct manner. The following should be noted:

- When a researcher has to rely financially on a sponsor, both parties need to clarify ethical issues beforehand, for instance that the sponsor should not act prescriptively towards the researcher; that the identity of the sponsor will not remain undisclosed; that the real findings will not remain undisclosed in order to concur with the expectations of the sponsor; or that the real goal of the investigation will not be camouflaged.

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- When colleagues are involved, formally or informally, a clear contract between the parties is preferable, because everyone then knows what everyone else's share comprises. A formal contract avoids any misunderstandings.

3.11 Publication of the findings

The findings of the study must be introduced to the reading public in written form otherwise even a highly scientific investigation will mean very little and will not be viewed as research. Report writing includes doing all one can to make sure one's report is as clear as possible and contains all the information necessary for readers to understand what is being written. If errors occur in the study, this may lead to other researchers wasting their time and funds by relying upon the findings. Therefore, an ethical obligation rests upon the researcher to ensure at all times that the investigation proceeds correctly and that no one is deceived by the findings.

The information must be formulated and conveyed clearly and unambiguously to avoid or minimise misappropriation by subjects, the general public and even colleagues. Care should be taken that no biased language is used regarding gender, sexual orientation, racial or ethnic group, disability or age (Creswell 2003: 67; Walliman 2006: 152). Researchers should never manipulate results in order to confirm hypotheses or points of view. Researchers should compile the report as accurately and objectively as possible, because the fabrication or falsification of data is a very serious issue in research (Bless et al. 2006: 145; Marlow 2005: 26). In the same manner, someone else's work should never be incorporated without proper acknowledgement. Committing plagiarism is serious ethical misconduct and must be avoided at all costs.

The researcher personally realises best what the shortcomings of his or her investigation are and should mention them clearly in the report, whether they are errors in the questionnaire, the sampling procedure or the analysis of data. Release of the findings should occur in such a manner that utilisation by others is encouraged, since that, after all, is the ultimate goal of any research project.

Subjects should be informed about the findings in an objective manner, without offering too many details or impairing the principle of confidentiality (Bless et al. 2006: 145). The findings should be revealed to subjects as a form of recognition and to maintain future good relationships with the community concerned. Participation in a research project should be a learning experience for all concerned. It is not only the researcher who can gain more knowledge about the phenomenon, but also the subjects about themselves. Debriefing interviews are one way in which subjects can be assured of the learning experience. Making the research report available in simpler language is another way in which the project can be rounded off ethically, so that subjects can know exactly what has happened to the information.

4. ETHICS COMMITTEES

Universities, research institutions and major welfare organisations have ethics committees which are normally called institutional ethics committees (IECs) or institutional review boards (IRBs) (Barker 2003: 148). These committees or boards review research proposals according to strict guidelines and procedures before

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researchers are allowed to go ahead (Alston & Bowles 2003: 23; Ginsberg 2001: 22). These institutional review boards can be regarded as the watchdogs or gatekeepers of society as far as research is concerned and should be especially watchful of research conducted on vulnerable groups in society (De Vaus 2002: 81; Royse 2004: 50–51). These committees should preferably be independent panels of professionals from diverse backgrounds who review manuscripts anonymously (Jackson 2003: 267; Rubin & Babbie 2005: 91). Normally one will have to document the ethical implications of the project for the committee before it can be approved. Some organisations expect a full research proposal before considering it for ethical clearance. To submit a full proposal will also help the researcher to be clearer about the nature and aims of the project. If the board members have questions they will make suggestions about how the project can be modified to conform to their standards for ethical approval. In some cases permission for a project might even be refused.

These committees play an important role in protecting the public and human subjects from researchers who undertake unethical projects that do not serve the purpose of science. Such committees take part in ensuring accountability from the researcher (Babbie & Mouton 2002: 528). The main responsibility of such a committee is to ensure that the risks faced by participants in research are minimal. An ethical clearance number relating to a specific project is usually provided by the organisation. This number should be mentioned in all future correspondence regarding the project. Severe penalties are normally imposed on persons who do research without such an ethical clearance number or on people who do not adhere to the agreed procedures of ethical research (Alston & Bowles 2003: 23).

5. PROFESSIONAL CODE OF ETHICS

The seriousness of ethical concerns is evident in the various codes of ethics created and published by professional associations whose members engage in research (Babbie 2007: 27, 71). These mandates instruct us to do the right thing, but our motivation to work in an ethical manner should be driven by something more than rules and legislation, such as the values and norms that make researchers search for a just approach to everything they do in a research context (Morris 2006: 247). The adoption and publication of professional codes of conduct have not totally resolved the issue of ethical behaviour. Some researchers still disagree on some general principles and others debate specifics. The conflict mostly remains between the expansion of knowledge and the potential benefit the research may have for society, and the cost of the research to participants (McBurney 2001: 55).

Researchers who do not consider ethical issues carefully are negligent towards society. On the other hand, researchers who refrain from doing an important study because of excessive concern about participants are also failing to keep a commitment to the same society that hopes for a better future (McBurney 2001: 55). Researchers should discuss their research with colleagues and seek advice from ethics committees at their institution because outsiders are usually more objective than researchers themselves.

To underpin the various ethical issues and to formulate guidelines to curb the limits of freedom in research and to define the rights of respondents and the community, a variety of codes of ethics have been formulated by professional societies.

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The need for a written code of ethics has developed over the last 20 years, mainly because many more studies are now being conducted and the sample size per study is probably much larger than in the past. An American committee known as the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, the Helsinki agreement to address human rights and fundamental freedoms as well as the Belmont Report on the protection of human subjects of biomedical and behavioural research are but a few of many international professional organisations and groups that focus on the protection of the rights of participants in research projects (Morris 2006: 247).

These codes of ethics generally make provision for the planning of research, the responsibility for the project, institutional approval, informed consent, sharing and utilising of data, honouring commitments and reporting of data (Babbie & Mouton 2001: 529–531). In the US the National Association of Social Workers (NASW), social work's major professional organisation, promulgated a specific code of ethics for social work, with the latest revision in 2002, that explicates the values, rules and principles of ethical conduct to which its members are to adhere (Barker 2003: 285–286; Marlow 2005: 17; Rubin & Babbie 2005: 83). Under this code, social workers are encouraged to participate in and support research as a means of improving social work practice and to help build knowledge about the profession (Ginsberg 2001: 22). The following can be regarded as some guidelines for social work research as suggested by the Code of Ethics of the NASW in the US (Williams et al. 1995: 41):

- The possible consequences for research participants should be carefully considered.
- It should be ascertained that the consent of participants is voluntary and informed, without any implied deprivation or penalty for refusal to participate, and with regard for participants' privacy and dignity.
- Participants should be protected from unwarranted physical or mental discomfort, distress, harm, danger or deprivation.
- As far as the discussion of evaluation of services or cases is concerned, it should only be done for professional purposes and only with people directly and professionally involved.
- All information obtained about participants should be treated confidentially.
- The researcher should take credit only for work actually done in direct connection with scholarly and research endeavours, and should give credit to the contributions made by others.

The Social Service Professions Act (No. 110 of 1978 as amended in 1998) and the general Ethical Code of the South African Council for Social Service Professions (1986) can be seen as binding for social work researchers as well. The conduct that concerns the profession, a client (respondent), a colleague or another professional person, the employer, a social work organisation and the community at large is, as a rule, as applicable to social work research as it is to any of the other methods and the profession in general. However, the South African Council for Social Service Professions (SACSSP) has issued a booklet with the title *Policy guidelines for course*

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of conduct, code of ethics and the rules for caring professions (2006). This publication also makes provision for a section specifically on evaluation and research which covers all the ethical issues regarding social work research (SACSSP 2006: 9–12).

In spite of the existence of ethical guidelines and committees that may support researchers in their decision making, the final responsibility for ethical conduct rests squarely with the researchers concerned; they will be accountable for the positive and negative consequences of every decision they take. Participants in research projects do not put their trust in committees to protect them, but in the individual researchers who involve them in a particular project. It is essential, therefore, that all caring professions be familiar with all the necessary ethical principles involved in research that concerns people (Williams et al. 1995: 30; York 1997: 310).

6. ETHICAL DECISION MAKING

Ethical decision making requires that complex decisions be made. The curriculum of social work students, for example, should provide an opportunity for students to grapple with both ethical and legal dilemmas in a safe and supportive environment. In this manner a personal approach to ethical decision making could be formed by every prospective social worker. Ethical issues come to the fore in human sciences research when conflict arises between the values of the community in matters such as freedom and privacy, and scientific methods that are aimed at generating data of the highest quality. In this regard an ethical dilemma arises if the researcher chooses one form of conduct and respects one moral principle, but transgresses another.

Utilisation of an ethics committee that considers research proposals is increasingly becoming accepted practice. Such a committee thoroughly studies all proposals, accepts or rejects them, or proposes certain modifications. However, the final responsibility rests with each individual researcher to eventually present a study that fulfils all ethical requirements. Finally, the right of social scientists to study whatever they deem to be of scientific interest is fundamental in a free society. This right, however, also implies the responsibility to ensure that the relevant investigation meets all the ethical requirements as spelt out in this chapter.

SUMMARY

In this chapter, ethics is defined as a set of widely accepted moral principles that offer rules for, and behavioural expectations of, the most correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants and students.

Important issues that are explored are that no harm should come to experimental subjects and/or respondents; that prospective respondents should give their informed consent; that respondents should not be deceived in any way; and that researchers should be competent and responsible. The existence of a code of ethics is stressed as a prerequisite for full professional recognition. Finally, the need for an ethics committee to consider research proposals and thus assist in ethical decision making is highlighted.

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SECTION
B

Self-evaluation and group discussion

Select one of the following situations. Write out your plea of defence to the ethics committee and deliver it to your group, who are to role play the ethics committee.

- You are doing your practical assignment at a high school, and at the same time collecting data for your final-year research project, a qualitative study on rape. You have interviewed ten girls in Grade 9, selected randomly, on their knowledge of the problem and how they would handle such a situation. One morning the principal calls you to her office, as two different mothers have complained about the interviews. Their daughters – the two girls concerned – have in reality been raped, and were very upset when they went home. The principal has referred your case to the ethics committee of your university or college.
- You are doing your practical assignment at a general hospital, and at the same time collecting data for your final-year research project, a qualitative study on HIV/Aids. You have interviewed ten patients, selected randomly, on their knowledge of the condition. One morning the matron of the hospital calls you to her office, as two patients have complained about the interviews. They are planning to sue the hospital for letting you know that they have been infected with the virus. The matron is getting legal advice, but has also referred your case to the ethics committee of your university or college.
- You are doing your practical assignment at a family welfare agency, and at the same time collecting data for your final-year research project, a qualitative study on child abuse. You have interviewed ten of the clients of the social worker with whom you have been placed, selected randomly from her case load, on their knowledge of the phenomenon, and what they would do if they became aware that one of their neighbours was abusing a child. Two of the clients have complained to the agency, alleging that the agency has broken confidence by letting you know that they appeared in the Children's Court for child abuse some years before. The director of the agency (not a trained social worker) has promised the clients that she will deal with you, and has referred your case to the ethics committee of your university or college.

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SECTION

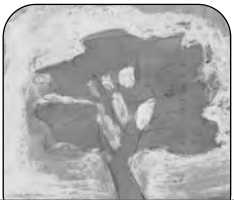
C

Steps unique to the quantitative process

QUANTITATIVE RESEARCHERS AT WORK	
Section C Steps unique to the quantitative process	
Chapter	**Research process**
9. In-depth review of literature	**Phase 3: Planning** Step 6: Undertake an in-depth literature review
10. Quantitative research designs	Step 7: Select a research design
11. Single-system design	
12. Quantitative data-collection methods: questionnaires, checklists, structured observation and structured interview schedules	Step 8: Select method(s) of data collection and analysis
13. Quantitative data collection methods: indexes and scales	
14. Sampling in the quantitative paradigm	Step 9: Select a sampling plan
15. The pilot study in the quantitative paradigm	**Phase 4: Implementation** Step 10: Conduct a pilot study Step 11: Conduct the main research
16. Quantitative data analysis and interpretation	**Phase 5: Data analysis, interpretation and presentation** Step 12: Process and analyse data and interpret results
17. Writing the research report	Step 13: Write the report

In this section, steps 6 through to 13 are described for the researcher who opts for a quantitative study.

These steps comprise undertaking an in-depth literature review, selecting a research design from the various designs available to the prospective researcher, selecting a method or methods of data collection and analysis, selecting a sampling plan, conducting a pilot study, conducting the main research, processing, analysing and interpreting the results and, finally, writing the research report.



9

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In-depth review of literature

Learning objectives

Studying this chapter should enable the reader to

- argue the necessity of a timely review of literature
- determine the functions of the literature review
- consider a strategy for conducting a literature review
- discover different sources for conducting a literature review
- utilise the most effective format for organising the review.

1. INTRODUCTION

A review of literature has different purposes and strategies, depending on whether a researcher conducts a quantitative or qualitative research project, but it also has certain aspects common to both. In this chapter, the elements of conducting an in-depth literature review specifically relevant to the quantitative research process will be highlighted. In Chapter 18 the important aspects when utilising literature in a qualitative project will be discussed, while the elements common to both these approaches will also be dealt with in the same chapter. As has been alluded to in earlier chapters, the literature review is not completed at any one time in the research process. It is important, though, that the literature review is undertaken as early as appropriate in the process, with the understanding that, as the research evolves and new issues emerge, additional reviews of the literature will be required. Denscombe (2002: 54) reiterates that "newly published works need to be considered; new sources are discovered; different things become relevant as the research progresses".

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SECTION
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2. PHASE 3: PLANNING

2.1 The necessity of a review of literature

A review of literature is aimed at contributing to a clearer understanding of the nature and meaning of the problem that has been identified. Unfortunately, not all researchers or potential researchers are automatically convinced of the necessity of a literature review as an integral part of the research process. Experience has taught us that some researchers become aware only very late in the research process of the need for a thorough background knowledge of the phenomenon under review in order to conduct a meaningful piece of research. Only once a researcher really comprehends the very important purpose of the literature review is it given its rightful place in the project.

In a general sense, a literature review serves to put the researcher's efforts into perspective, situating the topic in a larger knowledge pool. According to Grinnell and Unrau (2005: 46), it creates a foundation, based on existing related knowledge. As such, all research reports will generally include a chapter (or where appropriate, a section) that may be titled "Review of the literature" or something similar. The literature review serves a number of broad functions – some of these more pertinent before data collection and others after it.

- Literature is an excellent source for selecting or focusing on a topic and refining the research question, as it reduces the chances of selecting an irrelevant or outdated topic/focus by investigating what has already been done in a particular problem area. Rubin and Babbie (2005: 121) reiterate that an early review of the literature is a prime source for selecting a topic to begin with, as it provides substantially better insight into the dimensions and complexity of the problem. In reading about a specific topic, the researcher may shape the research question/hypothesis through the identification of alternative conceptions of the problem or variables that had not previously occurred to the researcher. Novice researchers commonly make the mistake of putting off their literature review until they have sharpened their research question, and come up with a design to investigate it. Research can be undertaken that way, the authors argue, but it is not the most effective utilisation of time.

- At the same time, the researcher ensures that nobody else has already performed what is essentially the same research. It saves time and ensures no unnecessary duplication of what others have already done (Monette, Sullivan & DeJong 2008: 81) or at least an informed decision to replicate a previous study. Replication, for the novice researcher, is an excellent activity because it eases the many decisions required when conducting an inquiry. Many disciplines fail to give replication its due as a legitimate and worthwhile research function.

- In the process of discovering related research on the specific topic, Kreuger and Neuman (2006: 461) point out, the researcher may benefit from the efforts of others. This may divulge procedures, techniques and designs worth copying or as Monette et al. (2008: 81) mention, pitfalls to avoid. A researcher may identify deficiencies in previous research or identify the practical obstacles that others have already encountered in the planned line of research. The researcher may

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learn about existing tools or methods, or determine better methodologies (e.g. sampling strategies, designs or measuring instruments).

- A thorough scrutiny of literature will allow the researcher to learn more about the history, origin and scope of the research problem (Grinnell & Unrau 2005: 47) and it will stimulate the identification of "evergreens" and "thought leaders" in the field of study. This will enable a researcher to demonstrate a familiarity with knowledge on the most recent and authoritative theories, accepted definitions and key concepts in this field of study. According to Kreuger and Neuman (2006: 461), this also serves to establish credibility, as it tells a reader that the researcher knows the research in an area and knows the major issues: "A good review increases a reader's confidence in the researcher's professional competence, ability and background."
- According to Kreuger and Neuman (2006: 461), a good literature review places a research project in context – it shows the path of prior research and how the current project is linked to the former. The researcher conceptualises the research problem and locates it in a body of theory. Initially, this may happen intuitively. However, as the researcher explores theoretical literature, those assumptions are stated in a framework of theory. The literature review provides the framework of the research and identifies the area of knowledge that the study is intended to expand.
- As referred to earlier, review of the literature continues throughout the research as new issues emerge. According to Grinnell and Unrau (2005: 47), literature also assists a researcher after data collection to explain differences between the findings and existing knowledge, and allows identification of ways in which the current findings are consistent with and support existing knowledge, and how they may advance knowledge.

Once convinced that a scrutiny of literature is necessary and should be conducted in a timely manner, the researcher has to follow a proper strategy to ensure a thorough review of literature. As Leedy (2001) reminds us, knowledge does not march forward any more; it arrives with the speed of light. And researchers must implement the best strategy to find the most important literature in the most expeditious way.

2.2 A strategy for conducting a review of literature

Denscombe (2002: 52) points out that a critical review of the literature is a creative exercise, not a mechanical chore, and an activity that "calls for judgement and insight on the part of the researcher". Different authors suggest different steps which the researcher can follow in the execution of a critical review of literature. A synthesis of the suggestions offered by Kreuger and Neuman (2006) and Denscombe (2002) leads to the following guidelines:

- *Refine the topic.* Specify and draw the limits of the theme to be investigated so as not to waste time collecting resources that pertain only indirectly to the subject. The development of a manageable bibliography depends on the care with which

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SECTION
C

the research topic was selected. An unduly broad subject can overwhelm the researcher with literature, and a subject which is too narrowly defined can leave the researcher stranded with only a few articles or books.

- *Design a search.* Outline a clearly defined, well-focused strategy that will set the parameters of the search. The key is to be careful, systematic and organised. Decide how to record the bibliographic citations and begin a file to keep track of sources. Various methods are possible. A researcher can, for instance, open a file with an alphabetical division according to authors and references, with brief summaries of the contents of the source. Other researchers use a card index system or a computer with a document containing the bibliography. The latter is, without doubt, the easiest and most effective method of storing a bibliography and is, as such, recommended for the present-day researcher. Researchers are advised to store full details of all sources so that the eventual composition of the bibliography can be performed quickly and accurately. Some word-processing programs contain facilities for doing this automatically. It is usually a cumbersome and frustrating task for the researcher to reconstruct all sources at a later stage if they were not properly recorded in the first place.
- *Locate sources of literature.* Various sources exist, as will be discussed in the next section. However, locating those sources assumes familiarity with basic library utilisation skills and online search skills. A review of the general fields, as well as of the subject focused upon, can be considered, depending on the circumstances and the nature of the theme. It is very important that the researcher becomes familiar with the databases and types of literature search available at the organisation, university or any library where the search is conducted. Make use of the services of the subject librarian for locating indexes, abstracts and computerised databases. Some publications, such as Monette et al. (2008: 468), refer in detail to a number of databases, indices and Internet sites of value to researchers, and these will receive some attention later in this chapter. The first step is to find a good introductory textbook and to study it thoroughly before a comprehensive selection of relevant journal articles is undertaken. A search of research reports must not be neglected as these contain excellent summaries of available literature.
- *Use sources as a source of reference.* References to sources encountered in the course of the search must subsequently be investigated and sifted, as these sources themselves serve as sources of reference in that articles or books are quoted in the particular source. These latter sources can – and in some cases, must – subsequently be investigated. They in turn quote new information and in this manner the snowball technique is utilised.
- *Evaluate the information contained in the various works.* It is necessary to arrive at conclusions about the merits and failings of alternative ideas contained within the literature, although it is not always easy to criticise experts. The review is not only about the contribution of each separate item, but also about the literature as a whole.

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According to Rubin and Babbie (2005: 123), it is difficult to know when you have completed the literature review. They offer the following advice: "... [Y]ou have

probably reviewed enough literature when ... you find that you are already familiar with the references cited in the most recently published articles."

2.3 Sources of literature

Mouton (2001: 87) points out that the literature review encapsulates much more than just reviewing the literature. He uses the term "existing scholarship" to indicate the existing body of knowledge – or the range of research products produced by other scholars – which is more than the mere literature that a researcher should be able to identify and explore in an attempt to conduct a comprehensive review of literature. A literature review in fact refers to a scrutiny of all relevant sources of information.

However, the question arises as to what determines whether a source of information qualifies for inclusion in the category of literature worthy of review. According to Denscombe (2002: 53), such a judgement will be guided by expert opinion and the works that are most frequently cited. The credibility of a source is of critical importance. According to Grinnell and Unrau (2005: 47–54), Rubin and Babbie (2005: 122), Kreuger and Neuman (2006: 468–470) and Mouton (2001: 34–36), the most relevant sources can be reduced to the following:

- *Standard reference materials.* According to Rubin and Babbie (2005: 122), the best way to begin a literature review is usually by examining guides to the literature, including abstracts, bibliographies and indexes, as so many articles and books are being published. Although this kind of literature source does not contain detailed descriptions of specific subjects, it is a profitable way of commencing a literature search. An index lists only the citation, but abstracts provide summaries of published works and are a convenient way to learn about the existence of a publication. Over and above the general indexes, indexes of disciplines with specialised information are also available. This source of information can be of great value, since such speciality publications are indexed in depth.

- *Computer-accessible databases.* Progress in technology for the storage, retrieval and transfer of information is increasing the amount of knowledge accessible to researchers, but conducting electronic searches is becoming increasingly user friendly. A computerised literature search works on the same principle as standard reference materials as discussed above (i.e. an index or an abstract) and there are numerous search databases or systems. Each of these have a unique search "protocol" and it is often most effective to consult a librarian to assist in the compilation of keywords and access to the databases. Access to these databases is very expensive for individuals, but most university libraries possess extensive access that is available to researchers and students affiliated with the institution.

- *Internet.* In the past, scientific communication occurred largely by means of journals and books. With the advent of the Internet, an information explosion occurred, serving as a lively sounding board for research. As Grinnell and Unrau (2005: 49) point out, the Internet's easy accessibility and the breadth of information contained on it can greatly expedite a literature search. Unlike standard ref-

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erence materials, data on the Internet can be updated as frequently as is necessary. The information available is voluminous and comprehensive. However, the disadvantage of the Internet is that there are no hard and fast rules or procedures on how the network should function or how to access specific information. Against this background, Mouton (2001: 35–36) stresses the following aspects to be observed when a researcher makes use of the Internet:

- The Internet should not be seen as a substitute for traditional forms of literature review. Most scientific information is still being disseminated through traditional media such as books and journals.
- The Internet is a powerful means of making new and recent information such as official documents, policy documents, speeches or press releases available expeditiously. The Internet is thus an essential additional source of information for researchers.
- A researcher should always bear in mind that anyone is at liberty to make information available on the Internet. However, all information is not necessarily controlled, reliable, verified or correct. Grinnell and Unrau (2005: 48) state in this regard: "The ease with which knowledge can be put on the Internet is, at the same time its greatest weakness. Individuals can put anything they want on it – no verification is required."

Although obstacles such as technological problems and a lack of academic acceptance are still experienced, it is anticipated that the Internet and other electronic media will become increasingly indispensable sources of information for the researcher in future.

- *Scholarly books.* In a research context, scholarly books are referred to as those books that are based on research and/or contain original research or a collection of research articles. Such books are usually subjected to peer evaluation and are included in the catalogues of academic libraries. Kreuger and Neuman (2006: 469) warn that finding scholarly books on a subject can be difficult as libraries only list books that are in a particular library system. However, librarians have access to sources that list books at other libraries, or one can use the Internet effectively to search for books. It is important to use books as a source, as these provide different content to other sources. A good introductory text will not only serve as an "evergreen" or primary source of the particular theme, but should also contain a selected bibliography of basic textbooks and reports on research projects dealing with the subject. Such a primary, basic manual becomes a "road map" which guides the researcher in the literature review. The guiding source may, of course, change as the research proceeds. It is interesting to note that the specific authors who have written about or done research in a relevant field are readily identified, as the same names appear in most of the sources. It is recommended that basic books be studied before moving on to journal articles.
- *Articles in professional journals.* Professional journals are viewed as one of the most important sources of information for researchers, as they provide the most recent research and developments in a specific discipline. The articles are written by experts and evaluated by peers before they are published. Professional

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journals differ in volume, content and spectrum within a field of specialisation. Some journals focus on a specific specialisation, while others cover a broad field of disciplines or specialise in book reviews, literature reviews, policy analyses or theoretical essays. Recent debates on a certain topic, as well as reflection on current research on that topic, are normally reported in article format. These seldom appear in the form of a book. By neglecting journal articles, one essentially ignores very important current opinions and information on the topic, and one may even overlook leaders in the field. Several databases for discipline-specific journals are available at libraries and organisations and via the Internet, and must be consulted.

- *Personal interviews with authorities*. Grinnell and Unrau (2005: 50) regard authorities as an important source of knowledge, as some may know something important that may not be available in written form – especially important in indigenous cultures. However, they do concede that the principal problem surrounding this source of knowledge is the lack of consensus regarding who is an authority, and advise that researchers should use this source with caution.
- *Research reports, dissertations and monographs.* This category of sources contains descriptions of methods and findings of original research. The fact that these sources describe not only the results of research, but also the methodology utilised, and make this information available for public scrutiny and thus for criticism and replication, contributes to the particular credibility of such sources (Grinnell & Unrau 2005: 51). Specialised indexes list these sources of information comprehensively in accredited libraries. For example, *Dissertation abstracts international* lists dissertations with their authors, titles and universities. This index is organised according to subject, and contains a brief description/abstract of each dissertation.
- *Presentations at conferences, symposia and workshops.* A large amount of information and knowledge is generated and made available during conferences, symposia and workshops, often referred to as "grey" material. Although most papers are evaluated beforehand with a view to selection, a researcher should use such information with caution and critical evaluation. The reason for this is, inter alia, that the paper's relevance to the subject of a conference or symposium is often more important for selection than the quality of the research on which it is based. It is even possible for a presentation to be based on no empirical research whatsoever (Grinnell & Unrau 2005: 52). The researcher should thus evaluate the credibility of this source of information in terms of the selection process of presenters and the contents of the presentations. Most papers presented verbally at national and international conferences and symposia are made available to conference audiences and other interested parties. The contents of some papers are published later as articles in professional journals.
- *Public documents and records of public gatherings.* As these documents are open to the public, they sometimes make more effort to appear publicly correct than they contain knowledge and that leaves their credibility as a source somewhat suspect (Grinnell & Unrau 2005: 53). However, depending on the topic, these sources may provide very valuable information and should be considered.

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- *Newspapers, magazines and periodicals.* Newspapers, magazines and periodicals are possibly the most controversial sources of information as far as credibility is concerned, as circulation figures are often more important to editorial staff than scientific accuracy. Researchers should therefore use these sources of information with great circumspection and verify the contents against scientific sources.
- *Radio and television broadcasts.* Information acquired through radio and television programmes can be used profitably by researchers. However, in this regard the information should again be used with critical caution, as such information is not necessarily always based on proven research.

A wide variety of sources of information can thus be used by the researcher as part of the in-depth literature review. Any source relevant to the researcher's subject or research question can potentially provide the researcher with information. However, the researcher should always evaluate the credibility of the information before using it as part of the formal literature review.

3. ORGANISING AND WRITING THE LITERATURE REVIEW

Once the sources of the literature review have been exhausted and all the relevant references gathered, the researcher needs to organise the information. There are many different organising schemes. Mouton (2001: 91) discusses six alternatives:

1. By date of study
2. By school of thought/theory/definition
3. By theme or construct
4. Hypothesis
5. By case study
6. By method

Kreuger and Neuman (2006: 462) offer six types, including self-study reviews, context reviews, historical reviews, theoretical reviews, integrative reviews and methodological reviews.

However, the most important priority for organising and writing the literature review is to organise one's thoughts. Kreuger and Neuman (2006: 471) suggest the use of a mental map (more commonly known as a mind map). This helps to know what the central issues are that one wants to address, and then to identify any subthemes related to the main issue. These might emerge in main and subheadings, which will eventually form a framework according to which the researcher would wish to discuss the material. Grinnell and Unrau (2005: 55) advise that some knowledge collected may not seem to fit the framework, in which instance the researcher should consider the relevance of the material. One may also discover that there are gaps or areas and topics that should be included but were not explored.

Once the broad framework has been identified, Grinnell and Unrau (2005: 55) suggest that the existing knowledge be organised and presented so that it will be of maximum benefit to the reader. A good review will reflect both direction and a logical progression. The literature review must have a beginning, a middle and an end. According to Mouton (2001: 123), it is advisable for the introduction to include an outline of the literature covered, while the end or conclusion of the review should incorporate a summary of the main conclusions or findings reached in reviewing the

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literature. The middle section would obviously be a presentation of the relevant literature as the main body of knowledge according to the previously determined organising scheme. It is very important to ensure that strong logical links exist between the different parts of the argument/presentation. Kreuger and Neuman (2006) make it clear that a literature review is not a list of reports with a summary of the findings of each, nor is it without a sense of purpose, nor, finally, is it a set of notes strung together. It does, however, address the most important ideas, logically link statements or findings, and note the discrepancies or weaknesses identified.

All the rules of good writing apply to writing a good literature review. It should, among other things, be appropriate for the intended readers, and the purpose of the review should be clearly communicated. Grinnell and Unrau (2005) highlight two problems with a literature review that researchers should bear in mind. One occurs when the researcher's thinking dominates the literature review "and appears to be invulnerable to influence by it". The other is where the development of the researcher's thinking is barely evident in the literature review as the review seems to be "little more than a long series of quotations" with "not enough evidence that the knowledge assembled by the researcher was even assimilated" (Grinnell & Unrau 2005: 57). It is important that the researcher aims to provide a literature review that is a unified whole that seems to take the reader somewhere.

SUMMARY

As the literature study forms such an important and integral part of the research project, one should make sure that the most important aspects of the relevant literature have been included before decisions on the next step in the process are taken.

Self-evaluation and group discussion

Present the plan for your literature review by

- specifying and therefore drawing the limits of the theme to be investigated
- identifying the introductory textbook you have chosen
- listing the first ten relevant journal articles you have traced
- listing at least one research report, one short dissertation, one dissertation and one thesis relevant to your theme
- naming the databases and Internet sites you intend using
- stating the method for compiling a working bibliography you have chosen.

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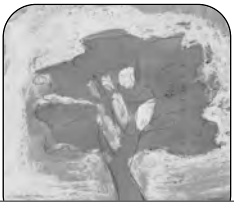

10

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Quantitative research designs

Learning objectives

Studying this chapter should enable the reader to

- gain an understanding of a classification scheme of quantitative research designs
- acquire a relatively in-depth perspective on different quantitative research designs.

1. INTRODUCTION

The second step in the third phase of the research process, namely the selection of a research design, will be described in this chapter. We sketch a relatively in-depth outline of the various quantitative research designs available to prospective researchers so that they can make an informed choice. Alternatively, they can combine selected designs or elements of designs in a design suited to their particular research goal and objective(s). We utilise an integration of different classification schemes of research designs in which the advantages of previous classification schemes are retained while the disadvantages are eliminated.

2. DEFINITION

Definitions of research design are rather ambiguous. For example, Blaikie (2000: 21) formulates a research design as an integrated statement of and justification for the more technical decisions involved in planning a research project and a process "analogous to the activities of an architect designing a building". Babbie (2007: 112) offers a closely related definition of design by stating that "a research design involves a set of decisions regarding what topic is to be studied among what population with what research methods for what purpose ... [R]esearch design is

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the process of focusing your perspective for the purposes of a particular study". According to these explanations, a research design focuses on the end product and all the steps in the process to achieve the outcome anticipated. Monette, Sullivan and DeJong (2008: 9) define research design as a plan outlining how observations will be made and how the researcher will carry out the project, which may seem similar to the descriptions by Blaikie (2000) and Babbie (2009), but offers information about this as a step in the process that follows problem formulation and precedes data collection. As such, it links to the description by Bless, Higson-Smith and Kagee (2006: 71), who, by contrast, define research design as "a specification of the most adequate operations to be performed in order to test a specific hypothesis under given conditions". What is meant by these definitions? Do they mean that the design is the overall plan for conducting the whole research study, or only those compact formulas – always called designs – given names such as case study, survey and classic experiment, and offered in methodology textbooks from which a researcher can select one? Krueger and Neuman (2006: 12) make similar reference to research design by outlining a step in the research process dedicated to "designing" the study that will enable the collection and analysis of data.

This potential confusion in the use of the term is addressed by Rubin and Babbie (2001: 107) in their statement that the term "research design" basically has two connotations. One refers to alternative logical arrangements from which one or more can be selected. Examples are experimental research designs, correlation research designs, and others in that category. The other connotation deals with the act of designing the study in its broadest sense. This refers to all the decisions we make in planning the study – decisions not only about what overall type or design to use, but also about sampling, sources and procedures for collecting data, measurement issues and data analysis plans. The view taken in this book concurs with Rubin and Babbie's (2001) first connotation, that is, we prefer to use the term "research design" as a step in the research process. In this chapter it will be used only for those groups of small, worked-out formulas from which prospective (quantitatively oriented) researchers or those undertaking quantitatively focused activities in a mixed-method design can select or develop one (or more) suitable to their specific research goals and objectives, as will be described next. The term *research design* will be applied in a similar fashion with regard to qualitative designs or strategies available to the prospective researcher, as outlined in Chapter 19.

3. CLASSIFICATION SCHEME FOR QUANTITATIVE RESEARCH DESIGNS

Various authors suggest different classifications of designs. Some well known to researchers in the human professions are those of Campbell and Stanley (1963) and Cook and Campbell (1979). The classic status of these texts is confirmed by Babbie (2007: 228), as well as Leedy and Ormrod (2005: 222), who mention that their "discussion will be based on the classic book by Campbell and Stanley (1963)". Salkind (2006: 218) also gives acknowledgement to these texts by stating that " ... it helped revolutionize the way in which research projects are planned and conducted".

Based on Campbell and Stanley's (1963) classification, various authors categorise quantitative research designs according to the level of scientific rigour

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involved in proving the cause-and-effect relationship, as pre-experimental, quasi-experimental and true experimental designs (Babbie 2007; Bless, Higson-Smith & Kagee 2006; Leedy & Ormrod 2005; Salkind 2006). Leedy and Ormrod (2005: 222) also add *ex post facto* designs and factorial designs. Krueger and Neuman (2006: 162) distinguish between quantitative and qualitative research designs. The quantitative category includes experiments, surveys and content analysis. The types of experiment described are the classic experimental design; pre-experimental designs such as the one-shot case study, the one-group pretest-posttest design, and the static group comparison. The quasi-experimental and special designs described are the two-group posttest-only design, interrupted time series, equivalent time series, Latin square designs, the Solomon four-group design and factorial designs.

Maree and Pietersen (2007: 149) classify quantitative research designs in two main categories, namely experimental and non-experimental designs. According to these authors, non-experimental designs are mainly used in descriptive studies in which the units that have been selected to take part in the research are measured on all the relevant variables at a specific time without any manipulation. The most widely used non-experimental research design, according to them, is surveys. A more or less similar classification is made by Welman, Kruger and Mitchell (2005: 77) who distinguish between non-experimental, quasi-experimental and experimental research designs. Punch (2005: 72) categorises quantitative designs by putting them on a continuum, where the true experiment is at the left-hand end, the non-experiment (correlational surveys) at the right-hand end, and the quasi-experiment in between.

For our discussion we synthesise various classifications according to the principles designated in the text below.

3.1 Notational system

Following Cook and Campbell (1979: 95), we use a notational system in which X stands for a treatment or independent variable, O stands for an observation, and subscripts 1 through n refer to the sequential order of implementing treatment (X_1 ... X_n) or of recording observations (O_1 ... O_n). A dotted line between experimental groups indicates that they were not randomly formed.

In addition, the following symbols or notations – which are fairly widely accepted conventions – will be used:

R: Random assignment of subjects to a group
E: Experimental group
C: Control group

3.2 Types of quantitative research design

Every research project requires a research design that is carefully tailored to obtain appropriate data for investigating the specific research hypothesis and/or question. In broad terms there are two main classes into which quantitative research designs can be classified, namely *experimental designs* and *non-experimental designs*.

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3.3 Experimental designs

The basic idea of an experiment, in social science research, is that two comparison groups are set up. Then we, as researchers, will do something (administer an intervention, or manipulate an independent variable) to one of the groups, namely the experimental group. We do something different, or nothing at all, to the other group (the control group). We then compare the groups or test for differences between them on some outcome or dependent variable. Our intention is to say that any differences we find in the outcome (dependent) variable between the groups are due to (or caused by) the intervention or independent variable.

Based on this idea of an experiment, a variety of types of experimental design has been developed over time. Three main categories of experimental design can be distinguished: *pre-experimental*, *quasi-experimental* and *true experimental*. These designs have been developed to determine the presence of cause-and-effect relationships between different variables. In technical terms it means that we want to measure whether a specific intervention (independent variable) has any effect on the unit of analysis (dependant variable).

The most significant differences among these types of experimental design are the following:

- *Degree of control on the variables being studied.* The pre-experimental design has the least amount of control on the variables, the true experimental design has the most, and the quasi-experimental design is somewhere in the middle. The more control a design allows, the easier it is to attribute a cause-and-effect sequence of events.
- *Degree of randomness.* The degree of randomness between the designs varies according to the random selection of participants from a population to form a sample and to assign participants randomly to different groups.
- *Presence of a comparison or control group.* The pre-experimental designs include a comparison group in some cases, but usually not a control group. The true experimental designs always include a control group(s), and the quasi-experimental designs sometimes include a control group.

3.3.1 Pre-experimental designs

These designs are called "pre-experimental" to indicate that they do not meet the scientific standards of experimental designs. Pre-experimental designs are not characterised by a random selection of participants from a population, nor do they include a control group. Without either of these, the power of the research to uncover the causal nature of the relationship between independent and dependent variables is greatly reduced, if not entirely eliminated (Salkind 2006: 219). Such designs are helpful only for forming tentative hypotheses that should be followed up with more controlled studies.

Despite their limitations, pre-experimental designs are used when resources do not permit the development of true experimental designs. From a practical point of view it is sometimes simply not possible to investigate experimentally many of the questions of real interest and importance. Another problem is based on ethics. Very often, questions of research interest are beyond the reach of the experiment for a

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variety of ethical reasons. Human service practitioners especially are likely to be confronted by these dilemmas.

The following are the most popular types of pre-experimental design:

THE ONE-SHOT CASE STUDY DESIGN (ONE-GROUP POSTTEST-ONLY DESIGN)

The one-shot case study design is sometimes also called the one-group posttest-only design. The one-shot case study design is most often used to determine whether an event, intervention or treatment (independent variable) has any effect on a group of participants. The dependent variable is *measured only once* after the event, intervention or treatment (posttest), and conclusions are drawn. Such studies might be diagrammed as follows:

X O

An example of this design is research to determine the perceptions of recently graduated social workers on the goal suitability of their (i.e. the new social workers') training. The training of the recently graduated social workers is identified as the independent variable and their professional competence in practice as the dependent variable.

What shortcomings might be noticed about this design? First, no attempt at randomisation has been made, and secondly, the lack of an initial measure (pre-test) makes it very difficult to convincingly confirm that the social workers' professional competence is the result of their training programme per se. Many other variables may have influenced participants' performance, such as personal experiences or exposure to other training programmes. One observation or measurement can thus be misleading.

However, Leedy and Ormrod (2005: 224) warn that researchers must be careful not to confuse the one-shot experimental case study design with the case study design of many qualitative studies. The qualitative case study design involves in-depth and extensive engagement in a research setting and not just a single observation or measurement.

MULTIGROUP POSTTEST-ONLY DESIGN

According to Grinnell and Unrau (2005: 199), the multigroup posttest-only design is an elaboration of the one-group posttest-only design, in which more than one group is used. This design can be written in symbols as follows:

Experimental Group 1:	X	O_1
Experimental Group 2:	X	O_1
Experimental Group 3:	X	O_1
Experimental Group 4:	X	O_1

A hypothetical example of this design can be suggested thus: a researcher, stimulated by the research example described above, may decide to continue along the same lines and select as Experimental Group 1 the graduates of a certain university from, say, 1999; as Experimental Group 2 the graduates of the same university, but from 1998; as Experimental Group 3 the graduates of 1997; and as Experimental

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Group 4 the graduates of 1996. The researcher's objective will have to be clear in his or her own mind, for example that he or she is now interested not only in the nature of the difficult transition from university to practice, as explored previously, but in two additional variables:

- To what extent and in what ways experience in practice contributes to narrowing the gap between university and practice, in that experience may illuminate many of the concepts taught during training but which remained "dead" words on paper while the social worker was still a student
- To what extent and in what ways the components in the training programme of the university, as they developed from 1997 through to 2000, have contributed to narrowing the gap

These two additional variables will then have to be operationalised in the questionnaire now being sent out to the relevant research target groups.

THE LONGITUDINAL CASE STUDY DESIGN

The longitudinal case study design, Grinnell and Unrau (2005: 200) write, is exactly like the one-shot case study/one-group posttest-only design, except that it provides for more measurements of the dependent variable. This design can be written in symbols as follows:

$$X \quad O_1 \quad O_2 \quad O_3 \quad \ldots \quad O_n$$

A hypothetical example of this design could elaborate further on the previous example. A researcher may become so enthusiastic about this theme that he or she decides to select this design and follow up either just one of the groups of social workers involved above, or all four. A year later, the same or a slightly modified questionnaire may be mailed to the research target group; two years later, yet another batch of questionnaires and, say, three years later, yet another. Again the variables the researcher is interested in must be very carefully identified and defined. For instance, is he or she still only interested in how the gap can be narrowed, the impact of practical experience and the effects of the training, or is he or she perhaps now interested in more variables, such as the nature of the contexts (organisations) in which the social workers are working, the effects of changes of jobs or the effects of the management styles of the supervisors? If these three variables, for example, were added to the objectives of the researcher, they would have to be operationalised carefully and added to the (by now probably quite lengthy) questionnaire. However, some of the variables may now be dropped in favour of the new objectives triggering this new project.

ONE-GROUP PRETEST POSTTEST DESIGN

In the one-group pretest posttest design there is, within one group, measurement of a dependent variable O_1 when no independent variable X is present, and subsequently an independent variable is introduced, followed by a repeated measurement of the dependent variable O_2 at a later stage. Measures of the dependent variables O_1 and O_2 are compared for two different states of the independent variable

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within the same group (before and after). This design can be written in symbols as follows:

$$O_1 \quad X \quad O_2$$

An example of this design is, for instance, when a therapist wants to know if a specific trauma counselling programme (independent variable) will improve the anxiety level (dependent variable) of a group of people experiencing symptoms of post-traumatic stress. The researcher will measure the dependent variable (anxiety level) before implementing the programme (pretest), then conduct the trauma counselling programme (independent variable), followed by a repeated measure of the dependent variable (posttest). If a change has taken place, the researcher might conclude that the programme was the cause of improvement.

The main problem with this type of design is that there is no control group. Without this, how can the researcher conclude that any difference observed or measured between the pre- and posttest scores is a function of the treatment? What if some of the participants also received individual therapy to increase their coping skills? Such a factor, rather than the specific trauma counselling programme, might be responsible for any differences.

■ EX POST FACTO DESIGN

Ex post facto design (the term *ex post facto* literally means "after the fact") provides an alternative means by which a researcher can investigate the extent to which a specific independent variable may possibly affect the dependent variable(s) of interest. Although experimentation is not feasible, the researcher identifies events that have already occurred or conditions that are already present and then collects data to investigate a possible relationship between these factors and subsequent characteristics or behaviours (Leedy & Ormrod 2005: 252).

Graziano and Raulin (2000: 136) write that ex post facto reasoning is a major part of Freud's approach. He observed events after the fact, such as current neurotic symptoms, and then searched the client's reported history for clues about earlier events that might be causally related. This identification of contingencies is useful in suggesting hypothetical relationships. However, it does not provide the controls needed to rule out the possibility that other factors may have caused the symptoms. Case studies are by their nature ex post facto approaches. They lack control over independent variables and are unable to rule out the possible effects of other variables. For this reason, we cannot have confidence in any causal inference we might be tempted to draw. Such inferences must be treated as speculative hypotheses for further research (Graziano & Raulin 2000: 136).

Unlike other experimental studies, ex post facto designs thus involve no direct manipulation of the independent variable. The presumed "cause" has already occurred. To the extent that such manipulation is not possible, the researcher cannot draw firm conclusions about cause and effect.

3.3.2 Quasi-experimental designs

At the midpoint on the experimental continuum are quasi-experimental designs, which have some but not all of the requirements of an "ideal" experiment. The

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requirement that quasi-experimental designs lack most frequently is the random assignment of research participants to two or more groups. We are seldom in a position to randomly assign research participants to either an experimental or a control group. Sometimes the groups to be studied are already in existence; sometimes ethical issues are involved.

Although quasi-experimental research usually enables us to make conclusions about causal relationships with less conviction than in true experimental research, it nonetheless allows us to draw conclusions about such relationships with much more confidence than in pre-experimental research (Welman et al. 2005: 88).

The following are reasons for placing the designs in question in this category:

- The randomised one-group posttest-only design belongs here because, although subjects are allocated randomly, there is only one group and one test. Comparison with a control group or with a pretest is thus impossible, and therefore this design is, at best, quasi-experimental.
- The static-group comparison or the comparison group posttest-only design has a built-in capacity for comparison of the results of two groups, equivalent to the experimental and control groups in true experiments, but again the lack of randomisation in sampling opens the door to biased selection of subjects and the defects accompanying such selections, as viewed from a quantitative perspective.
- The comparison group pretest-posttest design is the equivalent of the classic experimental design, in that two groups are used, as well as pre- and posttests. However, randomised allocation of subjects is lacking, raising the same objections as expressed above.
- Interrupted time-series and single-system designs also approximate experiments, but the lack of randomisation is again the problem. Data collection methods in quasi-experiments can be structured observation schedules, structured interview schedules, questionnaires or indexes and scales, not necessarily standardised.

RANDOMISED ONE-GROUP POSTTEST-ONLY DESIGN

The distinguishing feature of the randomised one-group posttest-only design is that members of the group are deliberately and randomly selected for it. Otherwise, this design is identical to the pre-experimental one-group posttest-only design. The randomised one-group posttest-only design can be illustrated with the following symbols:

$$R \quad X \quad O_1$$

A hypothetical example of the use of this design can be when a researcher is interested in the effects of rape on victims. A random sample can be drawn from police records of a certain geographical area and over a certain period of time. This sample of victims is then approached and data collected by using a questionnaire or structured interview. The salient factor here would be the fact that the sample was selected randomly.

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SECTION C

THE STATIC-GROUP COMPARISON OR COMPARISON GROUP POSTTEST-ONLY DESIGN

This design can be illustrated as follows:

Experimental group: X O_1
– – –
Comparison group: O_1

In a static group comparison design, one group is the experimental group, which is exposed to the independent variable X. The other group, the comparison group, is not exposed to X. Reliable, accurate and valid measurement is necessary. The broken line between the two groups serves to emphasise the fact that the groups were not obtained by random assignment. As a result, selection biases on other variables related to the dependent variable, O_1, may occur. This design can control for more internal validity factors than previous designs. It is still insufficient, however, for inferring causal relationships.

This design improves on the one group posttest-only and multi-group posttest-only designs by introducing a comparison group which does not receive the independent variable, but is subject to the same posttest as those who do (the experimental group). A group used for purposes of comparison is usually referred to as a comparison group in an exploratory or descriptive (quasi-experimental) design, and as a control group in an explanatory (true experimental) design. While a control group is always randomly assigned, a comparison group is not.

An example of this research design is where autistic children are exposed to a play technique programme to improve their social behaviour. The experimental group receives the programme while the comparison group does not receive the independent variable. Both groups are subject to the same posttest. The results of both groups are compared to determine if the play technique programme has improved the social behaviour of the experimental group. Sampling is purposive and not random.

COMPARISON GROUP PRETEST-POSTTEST DESIGN

The comparison group pretest-posttest design elaborates on the one-group pretest-posttest design by adding a comparison group. This second group receives both the pretest O_1 and the posttest O_2 at the same time as the experimental group, but it does not receive the treatment. It is the equivalent of the classic experiment, but without random assignment of subjects to the groups. This design can be illustrated as follows:

Experimental group: O_1 X O_2
– – –
Comparison group: O_1 O_2

The experimental and comparison groups formed under this design will probably not be equivalent, because members are not randomly assigned to them. The pretest, however, will indicate the extent of their differences. If the differences are likely to affect the posttest, the statistical technique of analysis of co-variance can be used to compensate for them.

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An example of a study utilising the comparison group pretest-posttest design is the evaluation of a substance abuse prevention programme for early adolescents in KwaZulu-Natal. Twenty-five early adolescents form the experimental group, who participated in the substance abuse prevention programme. Twenty-five early adolescents form the comparison group and did not participate in the programme. Both groups were measured before implementation of the prevention programme (pretest). Thereafter, the experimental group was subjected to the programme. Following the programme both groups were measured again (posttest). Measurement occurred with the use of a questionnaire that was administered in group context. This enabled the researcher to measure the effectiveness of the substance abuse prevention programme by comparing differences between pre-intervention and post-intervention measures (Brandt 2002).

INTERRUPTED TIME-SERIES DESIGN

In the interrupted time-series design, a series of pretests and posttests is conducted over time, both before and after the independent variable is introduced. The basic elements of this design are illustrated as follows:

$$O_1 \quad O_2 \quad O_3 \quad X \quad O_4 \quad O_5 \quad O_6$$

This design takes care of the major weakness in the pre-experimental one-group pretest-posttest design, which does not control for rival hypotheses. The same type of time-series design can be used to evaluate the results of a treatment intervention with a single-client system, as in the single-system designs, which will be described in the next chapter. It is often mentioned that the single-system designs developed from this time-series design.

In summary, these designs are mainly aimed at the identification of commonalities with a view to using more advanced designs and data-gathering methods for more advanced measurements at a later stage.

3.3.3 True experimental designs

The true experimental designs are at the highest level of the experimental continuum, have the most rigid requirements, and are most able to produce results that can be generalised to a specific population. True experimental designs include all the steps in selecting and assigning participants in a random way, plus they incorporate a control group.

According to Punch (2005: 69), we will have a true experiment if there is

- the manipulation of one or more independent variables for the purposes of the research, and
- the random assignment of participants to comparison (control) groups.

The three designs in this category meet the requirements of true experiments in that randomisation in sampling and a very clear and distinctive built-in strategy for making comparisons are present.

The rationale for our classification is as follows: in the case of the classic experiment, the experimental results of two groups of subjects, the experimental and con-

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trol groups, are compared. The Solomon design (see below) is a further refinement of the classic experiment and as such even more comparisons are possible. The randomised posttest-only control group design also makes provision for comparing the posttest results of two randomised groups – the experimental and the control groups. The data-gathering methods are most often standardised measures such as indexes and scales.

RANDOMISED PRETEST-POSTTEST CONTROL GROUP DESIGN (CLASSIC EXPERIMENT)

The classic experimental design (also called the randomised pretest-posttest control group design) is the basis for all the experimental designs. It involves an experimental group and a control group, both created by random sampling and random assignment methods. As illustrated below, both groups take a pretest (O_1) at the same time, after which the independent variable (X) is given only to the experimental group, and then both groups take the posttest (O_2). The design is illustrated as follows:

Experimental group:	R	O_1	X	O_2
Control group:	R	O_1		O_2

RANDOMISED SOLOMON FOUR-GROUP DESIGN

According to Campbell and Stanley (1963: 24), the Solomon four-group design deservedly has higher prestige value than the classic experiment, and represents the first explicit consideration of external validity factors. This design is a variation of the classic design, involving four rather than two randomly assigned groups. There are two experimental groups and two control groups, but the pretest is taken by only one of each of these groups. Experimental Group 1 takes a pretest, receives the independent variable, and then takes a posttest. Experimental Group 2 also receives the independent variable, but takes only the posttest. The same is true for the two control groups: Control Group 1 takes both the pretest and posttest, and Control Group 2 takes only the posttest.

E_1:	R	O_1	X	O_2
C_1:	R	O_3		O_4
E_2:	R		X	O_5
C_2:	R			O_6

The advantage of the Solomon four-group design is that it allows for control of testing effects, since one of the experimental groups and one of the control groups do not take a pretest. However, it has the disadvantages that twice as many study participants are required, and that it requires more work to implement this design than the classic experimental design. The rationale behind this design is that the design controls for the influence of the pretest. The researcher expects no difference between the results of both experimental groups, and also no difference between the results of both control groups. But he or she does expect a significant difference between the results of both experimental groups together, and those of both control groups together, in order to be able to assign the difference to the influence of the independent variable – the treatment or programme.

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This design can be illustrated by the example of a study planned to ascertain whether, in fact, a marital enrichment programme will enhance the level of marital satisfaction (Prinsloo 2001). An experiment utilising the Solomon four-group design is planned, in which a sample of 20 couples will be randomly selected from a carefully delineated population of 50 couples who are members of a specific church group. The sample will be randomly assigned to two experimental and two control groups. One experimental and one control group will be pretested with the Kansas Marital Satisfaction Scale measuring the level of marital satisfaction. Members of the two experimental groups will attend the marital enrichment programme over a period of three days. Members of the two control groups will not attend the programme. After termination of the programme all subjects will be posttested with the Kansas Marital Satisfaction Scale.

RANDOMISED POSTTEST-ONLY CONTROL GROUP DESIGN

This design is identical to the classic experiment, except that there are no pretests. There is random assignment to the experimental and control groups. The experimental group receives the independent variable, and the control group does not. After a specified time, both groups are measured on the dependent variable. Differences between groups in the relative amounts of the dependent variable can provide evidence of association between the independent and dependent variables.

Experimental group:	R	X	O_1
Control group:	R		O_1

Random assignment to groups is critical in this design. Without it, the researcher has nothing more than a static group comparison, from which it is difficult to draw inferences about cause and effect.

3.4 Internal and external validity of experimental designs

We must remember that the experimental research design we finally select should always be evaluated on how close it comes to an "ideal" experiment in reference to the characteristics that we have discussed. The research design finally selected needs to be evaluated on how well it meets its primary objective, namely adequately answering a research question or validating a hypothesis. In short, a research design should be evaluated on how well it controls for the following:

- *Internal validity* – the degree to which changes in the dependent variable are indeed due to the independent variable rather than to something else. A high degree of internal validity, according to Maree and Pietersen (2007: 151), means thus "that there was sufficient control over variables other than the treatment, and consequently it can be concluded that the treatment alone was the causal factor that produced a change in the dependent variable".
- *External validity* – the degree or extent to which results can be *generalised* to the whole population. A high degree of external validity means thus "that the experimental findings can be *generalised* to events outside the experiment, that is the findings should not only be true in similar experiments, but also in real life" (Maree & Pietersen 2007: 151).

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Both internal and external validity are therefore of critical importance in experimental research and can be achieved in an experimental design by taking into account various threats that are inherent in all research efforts. According to different authors (Babbie 2009; Maree & Pietersen 2007; Salkind 2006; Leedy & Ormrod 2005), good scientists always try to reduce or eliminate threats to internal and external validity.

3.4.1 Threats to internal validity

The following most serious threats to internal validity of an experiment should be minimised (Babbie 2007; Maree & Pietersen 2007; Salkind 2006):

- *History.* Many experiments take place over an extended period of time (history), and events other than the experimental stimulus can occur during the course of the experiment that might affect the dependent variable.
- *Maturation or changes in participants.* People are continually growing and changing (e.g. growing older, more experienced, getting bored or tired), and such changes can influence their behaviour and the results of an experiment.
- *Selection.* The way in which participants are selected and groups are composed might influence the final results of an experiment.
- *Testing.* The process of testing and retesting might influence participants' behaviour, thereby confounding the experimental results.
- *Instrumentation.* Unreliable instruments or changes in scoring procedures between pre- and posttests could influence the results.
- *Statistical regression.* There is a tendency for people who all have an extremely high score when measured the first time to be less extreme if they are measured again. Examining the pretest scores will assist in detecting this threat.
- *Experimental mortality (attrition).* Often participants will fail to complete an experiment. They may die, move away or refuse to participate any further, or may be unavailable for other reasons. This threat can affect statistical comparisons and conclusions.
- *Diffusion of treatments.* When experimental and control-group participants can communicate with each other, experimental participants may pass on some elements of the experimental stimulus to the control group. In that case, the control group becomes affected or "contaminated" by the stimulus and is not a real control.

3.4.2 Threats to external validity

Just as there are threats to the internal validity of a design, so there are threats to a design's external validity. Good scientists must always try to reduce the following threats to external validity (Maree & Pietersen 2007; Salkind 2006; Monette et al. 2008):

- *Multiple-treatment interference.* In an experiment in which there is more than one independent variable, it may be the particular combination and ordering of experimental treatments that produce change in the dependent variable. If this

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same combination and this same ordering do not occur outside the experimental setting, the findings from the experiment cannot be generalised.

- *Pretest sensitisation.* In any design using pretesting, the possibility exists that a pretest may influence participants' degree of sensitivity to an independent variable and obscure the "true" results thereof.
- *Unrepresentative samples.* The representativeness of a sample is crucial to the issue of generalisability. Unfortunately, it is often difficult to experiment on truly representative samples of any known population. Often, participants are volunteers, people are enticed in some way to participate, or people who happen to be available to the researcher are approached with a view to involvement in the study.
- *Demand factor.* The participants may become aware of what the experiment is all about and they may then change their behaviour to what they think is demanded of them.
- *Experimenter/researcher's expectations.* Researchers themselves can introduce distortion into the results that reduces, generalisability. Researchers, of course, usually have expectations concerning the results of an experiment, wanting it to come out one way or another. These expectations can be communicated to participants in such a subtle fashion that neither the researcher nor the participants are aware the communication has taken place.
- *Hawthorne effect.* Participants may react differently than they would in real life simply because they know they are participating in a research study, an effect known as *reactivity* or the *Hawthorne effect.*

3.4.3 Increasing internal and external validity

To maximise the internal validity of an experiment, randomly select participants from a population, randomly assign them to groups, and use a control group. In other words, internal validity is enhanced through greater control. According to Leedy and Ormrod (2005: 222), "[a] carefully controlled experimental design is the only approach that allows you to draw definite conclusions about cause–effect relationships".

Ensuring external validity is a somewhat different story because it is more closely tied to the behaviour of the participants or the researcher conducting the experiment rather than to the design. For example, the only way to ensure that the experimenter/researcher's expectations are not a threat to the external validity of the experiment is to be sure that the researcher acts in a way that does not interfere with the results.

In summary, Salkind (2006: 227) mentions that "[w]hereas most threats to internal validity are taken care of by the experiment's design, most threats to external validity need to be taken care of by the designer of the experiment".

3.5 Non-experimental designs

According to Maree and Pietersen (2007: 152), non-experimental designs are mainly used in descriptive studies in which the units that have been selected to take part

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in the research are measured on all the relevant variables at a specific time. No manipulation of variables takes place and it does not include an experimental or a control group.

Probably the most widely used non-experimental design in social science research is surveys, especially because surveys can be used for all types of study – exploratory, descriptive, explanatory and evaluative. However, surveys are done mainly to *describe* some sample in terms of simple proportions and percentages of people who respond in some way to different questions (Punch 2005: 75). Surveys thus share certain characteristics. First, surveys collect data from large samples of people and, second, all surveys present participants with a series of questions to be answered. These questions may tap matters of fact, attitudes, beliefs, prejudices, preferences or opinions. The questions may be simple single-item measures or complex multi-item scales (Monette et al. 2008: 158).

Reduced to its basic elements, a survey is quite simple in design, as described by Leedy and Ormrod (2005: 183–184): "[T]he researcher poses a series of questions to willing participants; summarizes their responses with percentages, frequency counts, or more sophisticated statistical indexes; and then draws inferences about a particular population from the responses of the sample." The most frequently used data collection methods for conducting survey research include written questionnaires, face-to-face or telephone interviews and, more recently, online surveys through e-mail or on a website.

When using survey designs researchers must, as in the case of experimental designs, also take care of control over their survey environment. Ideally, researchers should aim for optimal control over the survey environment, for example in terms of when and at which intervals participants will be surveyed, data gathering techniques, randomised sampling methods, the necessity of a pilot study and follow-up administration (Maree & Pietersen 2007: 155).

The two basic types of survey research design are defined in terms of whether the variable/s is to be measured once with a cross-sectional design, or over time with a longitudinal design.

3.5.1 Randomised cross-sectional survey design

The randomised cross-sectional survey design is usually associated with exploratory and descriptive studies which examine several groups of people *at one point in time*. This design can be used to determine whether a particular problem exists within a group of participants and what the level of the problem is. Needs assessments, used by community development workers to identify neighbourhood problems and service gaps, are typical examples of cross-sectional surveys. This design is written as follows:

$$R \quad O_1$$

3.5.2 Replicated randomised cross-sectional survey design

Replicated cross-sectional surveys are surveys of a particular population that are repeated over selected time periods. For each survey a new representative random sample is drawn. This design is analogous to the longitudinal case study in that repeated measurements are taken over time. However, it is different in other ways:

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- The same individuals are not necessarily surveyed. Hence, nett changes in the dependent variable can be observed, although the specific changes within individuals over time cannot.
- The purpose of the design is quantitative-descriptive rather than exploratory. The independent and dependent variables are, therefore, operationally defined in advance of the survey.
- The validity and reliability of the measuring instruments utilised must be high.
- Each sample is randomly drawn from the population. In addition, when it is possible to do so, relevant characteristics of the sample such as age, race, gender and social class are compared to the population to provide evidence of similarity for inferring representativeness.

Both types of survey design have advantages. One advantage of the cross-sectional design is that it is easier and less expensive to conduct than the replicated design because testing takes place over a limited time period. Because the time period for testing is short, dropout of participants is also minimised. On the other hand, the replicated design allows for the study of development over an extended period of time. What is more, because the same people are usually studied at more than one point in time, the participants act as their own controls.

SUMMARY

In this chapter research designs are described as groups of small, worked-out formulas from which prospective (quantitatively oriented) researchers can select or develop one or more that are suitable for their specific research goals and objectives.

In broad terms there are two main classes into which quantitative research designs can be classified, namely *experimental designs* and *non-experimental designs*.

Regarding the experimental designs three main categories of design can be distinguished: pre-experimental, quasi-experimental and true experimental.

The first category is that of the pre-experimental designs. Pre-experimental designs are not characterised by random selection of participants from a population, nor do they include a control group. The one-shot case study/one-group posttest-only design, the multigroup posttest-only design, the longitudinal case study, the one-group pretest-posttest design and the ex post facto design all belong to this category.

The category causing most confusion is that of the quasi-experimental designs, including the randomised one-group posttest-only, the static-group comparison or comparison group posttest-only, the comparison group pretest-posttest and the interrupted time series designs.

The three designs belonging to the category of true experimental designs meet the requirements of true experiments, in that randomisation in sampling is present, as well as a very clear and distinctive built-in strategy for making comparisons. Randomised pretest-posttest control group design (classic experiment), randomised Solomon four-group design and randomised posttest-only control group design all meet these requirements.

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Non-experimental designs are mainly used in descriptive studies in which the units that have been selected to take part in the research are measured on all the relevant variables at a specific time. No manipulation of variables takes place and it does not include an experimental or a control group. Probably the most widely used non-experimental design in social science research is surveys. Randomised cross-sectional surveys and replicated randomised cross-sectional surveys fall into this category.

Self-evaluation and group discussion

You are considering a specific research design for your quantitative study. Discuss the possible advantages and disadvantages with your tutor or study group by

- stating which design or combination of designs you have chosen
- describing the design carefully
- indicating how this design will be utilised in your specific study.

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11

H STRYDOM

Single-system design

Learning objectives

Studying this chapter should enable the reader to

- examine a definition of the concept of single-system design
- gain an understanding of the characteristics of single-system design
- describe the steps to be followed in implementing single-system design
- discover the different types of design available
- assess the advantages and disadvantages of single-system design.

1. INTRODUCTION

During the course of presenting a seminar, Prof. Walter Hudson (1995) indicated that in North America many social workers have almost fallen into a habit of doing single-system evaluations as a normal part of their dealings with all cases. The rationale is as follows: one has to wait a few days or weeks in any case before an intervention programme can be implemented, as those few days or weeks are necessary for exploring the most important dimensions of a problematic situation; so, periodically getting clients to complete an index, scale or questionnaire during that time becomes as normal and natural as breathing. The client usually enjoys doing it, feeling that this indicates real concern and a professional approach. It is difficult to determine to what extent these designs are being utilised in South African welfare organisations and whether social workers apply the principles of single-system evaluation at grass-roots level.

2. DEFINITION OF THE SINGLE-SYSTEM DESIGN

The term *single-system design* is the genus term denoting the study of a single subject or target behaviour on a repetitive basis linking research with practice (Alston & Bowles 2003: 178; DePoy & Gilson 2008: 191–192; Royse 2004: 71). Barker

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(2003: 399) and Glicken (2003: 28) call this research procedure *single-subject research*, and it can be regarded as a form of a micro practice research project which can be descriptive or explanatory (Morris 2006: 38). The single subject can be an individual, a family, a group, an organisation, a community or any client system (Yegidis & Weinbach 1996: 234). Alston and Bowles (2003: 179), Barker (2003: 399), Gravetter and Forzano (2003: 324), Marlow (2005: 112), Monette, Sullivan and DeJong (2005: 289) and Salkind (2000: 233) agree that the single-system approach is the ideal way to evaluate the effectiveness and impact of treatment interventions and to establish the existence of a cause-and-effect relationship between variables. Kirk (1999: 74) adds that in single-system designs one attempts to make inferences about treatment effectiveness by having the client serve as a representative of both the treatment and the control group.

By utilising this concept it is possible to measure the progress or otherwise of a certain intervention programme (Ginsberg 2001: 35; Marlow 2005: 115). Bloom, Fisher and Orme (2003: 37) and Jackson (2003: 248) define single-system designs as a set of empirical procedures used to observe changes in an identified target that are measured repeatedly over time. Mitchell and Jolley (2001) add that an important key to this approach is to prevent factors other than the treatment from varying. In this way the quality of service and accountability can be enhanced. Ginsberg (2001: 116) mentions that these measurements should also be statistically validated. Using this design is therefore also one way of enhancing a linkage between research and practice. The singular term thus indicates a certain type of experimental design which can be implemented in various forms and ways.

According to Graziano and Raulin (2000: 301–302) and Leedy and Ormrod (2005: 231), single-subject designs are experimental designs using only one participant. They should not be confused with the ex post facto (after the event), single-case study. Single-case studies using ex post facto analyses are frequently used in clinical research to provide in-depth descriptions of single individuals and to generate, but not test, hypotheses. The ex post facto, single-case study is weak, not because it has only one participant, but because the researcher does not control the independent variables. Because the independent variables are not manipulated, alternative hypotheses cannot be ruled out. However, with single-subject experimental designs, we do manipulate independent variables to observe their effects on dependent variables. The power of these designs lies in the control of independent variables, which reduces potential confounding and enhances internal validity.

When the plural form – single systems – is used, these various forms and ways in which single systems can be implemented are implied. These designs are described below and include designs such as case studies as a single-system design, the *A-B-A, A-B-A-B, B-A-B,* the multiple designs, and the intensity designs. DePoy and Gilson (2008: 193) refer to Yin's taxonomy of single system designs and focus on holistic single case, embedded single case, holistic multiple case and embedded multiple case study.

3. CHARACTERISTICS OF THE SINGLE-SYSTEM DESIGN

3.1 Specify the problem

The first step in a single-system project is to choose a certain behaviour to be moni-

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tored such as helping an adult to curb aggressive behaviour or to assist a child in having a better relationship with his or her parents (Royse 2004: 73). The specific problem which has to be changed, and about which the professional and client must reach consensus, must be delineated very thoroughly and clearly. Too vaguely defined or universally delineated problem formulations can be substantial obstacles. The single-system design requires the evaluator to have absolute clarity on the problem to be addressed.

3.2 Measurement of the problem

Graziano and Raulin (2000: 303) explain that, in single-system designs, multiple measures are taken from a single participant over time – both before and after a manipulation. The basic comparison is between the same participant's pre-treatment and post-treatment scores. At its simplest level, this resembles the pretest and posttest comparison – a relatively weak non-experimental design that fails to control many sources of confounding. Employing a single pretest and posttest is not sufficient basis for drawing causal inferences. A control group would control for many potential confounding variables, but a control group is not possible when we have only one participant. Single-subject designs improve on the pre-post designs not by adding a control group, but by adding more measures or more manipulations to the experiment.

It is most important that ways and means be found to observe and measure the problem. The setting of specific, measurable, client-desired outcomes is of major importance in single systems. Almost any problem that exists can be measured. Measurement, however, is merely a more formalised way of evaluation than is ordinarily done in practice. Various characteristics of measurement exist which are merely ways of stating how a certain measurement constitutes a good indication of the nature of a problem. Characteristics of measurement are, for instance, reliability, validity, utility, directness, reactivity, sensitivity and feasibility, as well as measurability on four levels of measurement (Bailey 1994: 61–77).

3.3 Repetitive measurement

The essence of the single-system design is the repetitive measurement of the target problems or objectives (Bloom et al. 2003: 39). The problem must be measured at regular time intervals in order to ascertain whether changes in the problem have occurred prior to, during or after the treatment was administered. The single-system design utilises repeated measures to establish trends and analyse change.

3.4 Baseline

The concept of the baseline is unique to the single-system design. Monette et al. (2005: 292), Royse (2004: 78) and York (1997: 231) note that the baseline phase denotes the data collection period which immediately precedes the implementation of treatment. It is thus the planned, systematic collection of data on the problem before intervention commences, over a long enough time span against which to obtain a stable measurement (McBurney 2001: 316). Monette et al. (2005: 293) mention two major issues that should be addressed during the baseline phase,

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namely what to measure and how to measure. Rubin and Babbie (2005: 376–380) see the baseline as a control phase serving the same function as a control group in experimental research. The data patterns collected during the baseline (control) phase are compared with the data patterns collected during the intervention (experimental) phase. The baseline phase should continue until the target behaviour appears to be relatively stable. The collected data are used to measure the problem initially and serve as a basis for comparison with the data gathered during the treatment and follow-up sessions.

3.5 Design

The highlight of the single-system design is the different phases such as the baseline phase, the intervention phase, a return to the baseline phase, and a further intervention phase. A fair number of possible designs are suggested by Grinnell and Unrau (2008: 166–178), Marlow (2005: 118–125) and Royse (2004: 79–86) of which the following five are of interest:

- The case study utilising a single-system design
- Experimental single-system designs
- Multiple designs for single systems
- Changing intensity designs and successive intervention designs
- Complex and combined designs

These designs are described in more detail later in this chapter.

3.6 Clear delineation of intervention

In order to collect valuable information, the therapist must be specific and clear with regard to the content and procedures of the intervention programme to be presented. Only if the different phases and the intervention as such are circumscribed clearly, and the therapist knows exactly what is to be achieved, can meaningful measurement be implemented. Only then can it be stated that a certain intervention has caused the change in the problem.

3.7 Analysis of data

The single-system design relies mainly on visual or graphically displayed analysis of changes in the client's behaviour (Grinnell & Unrau 2008: 161). The visual presentations are made by means of simple graphics or plotting, and not in the form of complex statistics. Plotting offers a graphic presentation of changes (improvement, deterioration or even no change) in the problem from baseline to termination of the treatment (Bloom et al. 2003: 40). On the chart the different phases are differentiated from one another by means of a vertical line.

4. STEPS IN THE SINGLE-SYSTEM DESIGN

Certain steps are common to both research and practice. These steps run a logical course and make the linkage between theory and practice possible. The essence of

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successful practice is the ability to demonstrate that what we have done (our intervention) has worked (is effective). The following steps of the single-system design can be delineated:

- *Formulate the problem.* The practitioner-researcher reviews relevant problem areas with the subject or subject system, arranges them in order of priority, selects one to focus on, and then defines it clearly and specifically. (This might be part of the assessment phase for the practitioner.)
- *Review the literature.* In preparing to conduct a study, researchers saturate themselves in the literature to see how others have studied similar problems, and also perhaps to link their study with others or with some broader body of knowledge. Thus the practitioner also attempts to find the most productive means of dealing with a problem, based on a review of the relevant literature. This is how practitioners inform themselves about the most effective methods of intervention that are available.
- *Develop goals and objectives.* Researchers establish some general goals and specific objectives to guide the conduct of their study. Practitioners must also develop specific goals and objectives for their intervention, which will guide them regarding where they are going with the intervention programme, and how they will know when they get there.
- *Develop hypotheses.* The practitioner develops hypotheses (we might call these assessment and intervention hypotheses) about the ways in which certain variables might be affecting a problem, and how best to go about changing those variables or the relationship between them.
- *Develop the design.* In research, this refers to the researcher's plan for collecting and analysing data. This includes who will collect it, how, from whom, when and where.
- *Define the dependent variable.* This is the variable or dimension in which the scientist-practitioner expects changes to be produced. The dependent variable is defined in operational terms – the specific, measurable indicators that will allow the researcher to evaluate any changes that were produced in the study. Practitioners also have to take care to be very specific in defining their dependent variables regarding the specific outcomes in measurable, precise terms. The dependent variable is repeatedly measured during both the baseline and intervention phases (Monette et al. 2005: 289). This allows practitioners to keep track of how well their intervention programme is proceeding and to evaluate their success. The dependent variable is therefore the problem which must be worked on.
- *Define the independent variable.* The independent variable must be clearly specified. To determine the reliability of the effect of the intervention the independent variable must be repeatedly manipulated with the same participants (Jackson 2003: 253). In practice, the independent variable is the intervention programme – the strategy and specific techniques and procedures the practitioner will use to change the client or client system. It is crucial in both research and practice to use an independent variable that can be expected to have some effect on the

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SECTION C

dependent variable, meaning that there should be a logical relationship between the independent and dependent variables. Otherwise, both the study and the intervention plan will be a waste of time.

- *Determine obstacles.* This is the stage during which the scientist-practitioner tries to look into the future and determine whether or not there may be any obstacles that could stand in the way of completing the study or intervention. This allows for planning ways to avoid them.
- *Baseline phase.* The baseline phase can be compared to a normal pilot study and entails the planned collection of data before the independent variable is implemented, in order to ensure that the researcher has full control over the course of the research project. As soon as the baseline appears relatively stable, the intervention phase can be implemented.
- *Intervention phase.* The planned intervention is implemented during this phase. The intervention phase is therefore the phase in which the independent variable is applied. This phase can be compared with the normal data collection and recording phase (Bloom et al. 2003: 39).
- *Analyse the data.* Once the programme is completed, the scientist-practitioner analyses the data to see whether there have been changes in the dependent variable; to look for relationships between variables; and to try to determine whether it was the independent variable that affected the dependent variable. The visual presentation of the data that reveals marked differences between baseline and intervention should now be prepared (Bloom et al. 2003: 40).

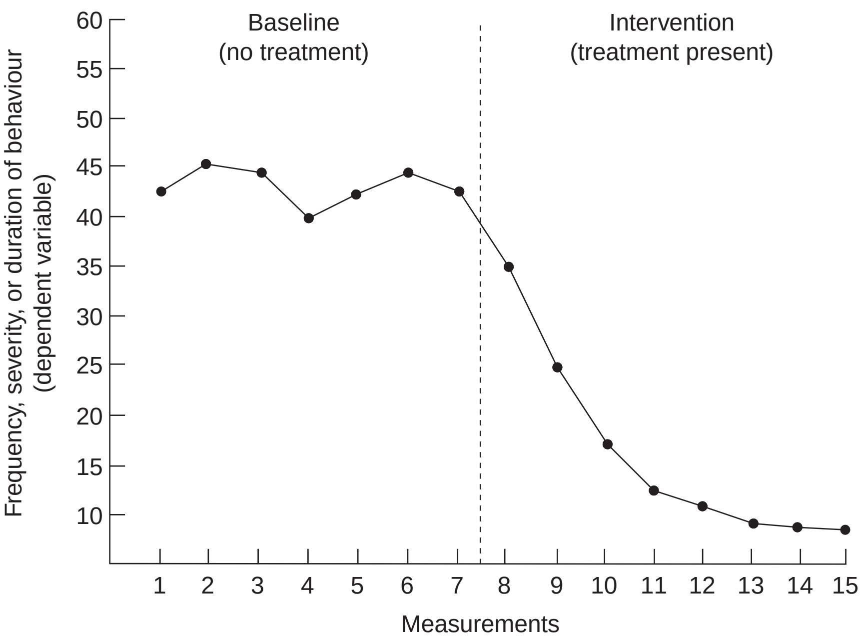

Figure 11.1 Hypothetical baseline followed by successful treatment

Source: Monette et al. (2005: 293)

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- *Report the findings.* The scientist-practitioner writes up the study as a research report and perhaps publishes it as an article in a journal to communicate the findings to colleagues. Practitioners also have a responsibility to communicate the results of their work to other members of the profession. This may be done through formal publication or presentations at conferences and workshops. This in turn allows other practitioners to use successful intervention approaches to enhance the effectiveness of their own practice.

5. DIFFERENT SINGLE-SYSTEM DESIGNS

Therapists should always be able to determine the changes that have taken place in a client's problem and whether it was the intervention that initiated these changes. They therefore need to be able to determine to what extent the intervention programme has been effective. The *A-B* design is the minimum evaluation effort that can be applied. However, the single-system design utilised depends on the nature of the client, the nature of the problem and the available time.

The single-system design involves the planned comparison of observations in a pre-intervention period (the baseline phase) with observations during the intervention period, or even during a post-intervention phase. Pre- and posttest comparisons are, after all, the essence of all scientific research.

It is sometimes difficult to differentiate between baseline and real intervention because almost anything the practitioner does already contains a measure of therapy. Intervention can thus be broadly described as that which the investigator does to induce change in the client's problem situation. Each letter of the alphabet represents a separate intervention procedure. The baseline phase is indicated with the letter A. All further baseline phases, whenever applicable, are indicated with the letter A. The first intervention is indicated with the letter B, the second intervention phase with the letter C, and so forth. If B and C, for example, are combined in a third intervention phase, it will be designated BC. Grinnell and Unrau (2005: 173–177) also refer to the pure B design, which is the normal A-B design without the A or baseline phase. In this case a few measurements are done during the intervention phase alone in order to measure progress.

If the scientist-practitioner wishes to determine exactly which of the intervention procedures is most advantageous to addressing the problem, it is important to add or withdraw only one variable at a time while moving from one phase to the next. We shall now consider five different single-system designs (Jackson 2003: 254–259; Gravetter & Forzano 2003: 333–350; Marlow 2005: 118–125; Monette et al. 2005: 300–310; Royse 2004: 79–86; Rubin & Babbie 2005: 380–387).

5.1 The case study linked to the basic single-system design

Traditionally, the case study has focused on either observation or intervention. The case study method is considered to be a weak evaluation design, and Bloom et al. (2003: 384) suggest that case study approaches should be used as methods of last resort or as very temporary approaches. If the case study is extended to include both observation and intervention, it can be viewed as the basic single-system design, that is, the A-B design (Glicken 2003: 162; Marlow 2005: 118–119).

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SECTION C

5.2 Basic experimental designs

Four possible experimental designs can be differentiated:

- *The A-B-A design.* Here, two comparisons are possible, that is, between the first baseline and intervention, and between intervention and a second baseline.
- *The A-B-A-B design.* This is actually a repetition, as the first A-B is repeated. Glicken (2003: 163) and Marlow (2005: 121) call this the A-B-A-B reversal design, in which the treatment is given for a short period of time and then, for the same amount of time, is taken away, and then given again. If we conclude that the treatment is the reason for the change, we should see an improvement in behaviour when treatment is initially provided, a worsening of behaviour when we withdraw the treatment, and an improvement when the treatment is provided again. This can induce a high degree of causality.
- *The B-A-B design.* Here, therapy is commenced immediately. This design may possibly be considered the weakest of the three, because a first baseline and a termination baseline are missing.
- *The B-C-B-C design* is a B intervention followed by a C intervention implemented twice in succession. This design is done when the researcher wants to compare the effectiveness of two interventions – B and C (Grinnell & Unrau 2005: 180). This design has no baseline phase, only the two interventions that are repeated, which can be regarded as a weak design seeing that there is no baseline to compare the interventions with.

5.3 Multiple designs

The following two forms of multiple design are differentiated:

- *Multiple baseline designs.* Here, for instance, the scientist-practitioner can work on three baselines simultaneously. A baseline is determined for all three problems. Intervention is implemented according to the client's readiness. This means that as soon as the first baseline A1 is ready, its intervention B1 commences. As soon as the second baseline A2 is ready, the same intervention B1 is implemented. The core aspect of this design is that different baselines are evolved for the different problems, while the intervention remains identical for all. It is also not necessary to move simultaneously from the different baseline problems to the intervention. As each problem's baseline stabilises, the intervention is applied (Jackson 2003: 255–258; Royse 2004: 84–86; Rubin & Babbie 2005: 382–385).
- *Multiple target designs.* In this case baselines for all three problems are again determined. But it is characteristic of this design that three different forms of intervention are presented. The baselines remain A1, A2 and A3, while intervention programmes B, C and D are applied. Consequently, each of the three problems is really treated as a normal A-B design.

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5.4 Changing intensity designs and successive intervention designs

Two forms of design are involved in changes in intervention:

- *Changing intensity design.* This design can be summarised as A-B1-B2-B3, which means that as B1 is effective, it can be sharpened (B2) and sharpened even further (B3). The therapy is thus intensified up to the final goal.
- *Successive intervention design.* In this case practitioner and client move from one intervention phase to the next (e.g. A-B-C) without a baseline phase in between. The successive designs can also take the forms of A-B-A-C or A-B-A-C-A. Those designs where there is a return to a baseline before further intervention takes place must be viewed as stronger designs. The latter design, namely A-B-A-C-A, is considered the most advantageous, because the design terminates with a baseline.

5.5 Complex and combined designs

Two forms of complex design are differentiated:

- *Alternating intervention programmes.* The practitioner and client commence with a baseline phase and then two intervention programmes are implemented alternately (B/C). In a successive intervention phase, one of the previous two (either B or C) is applied, depending on its effectiveness.
- *Interaction design.* Here again, experimental repetition is used. Two intervention programmes are utilised alternately, perhaps returning to the original intervention programme and then trying out an alternative programme. An example of such an interactional design could look like this: A-B-A-B-BC-B-BC.

6. ADVANTAGES AND DISADVANTAGES OF THE SINGLE-SYSTEM DESIGN

The following advantages may be listed for consideration by the scientist-practitioner:

- A model of evaluative accountability is given to therapists, clients, welfare organisations and financial supporters (Bloom et al. 2003: 50–51). Whenever research involves testing the success of an intervention, an ethical question arises over placing some participants into a control group that will not receive the programme or that will receive inferior treatment. The single-system approach allows for all the participants to be treated and evaluated, thus avoiding this particular ethical issue (McBurney 2001: 315).
- The single-system design is basically a do-it-yourself procedure which keeps costs down (Yegidis & Weinbach 1996: 252).
- The single-system design is a direct form of research, and results are immediately available.
- These designs are considered intrinsically superior to the ex post facto, single-case study, since in the latter case the researcher observes a completed situation,

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having had no control over independent or causal variables whatsoever (Graziano & Raulin 2000: 301). However, there are also two purposes for which a single-subject design is preferable to a group comparison, or pure experiment, where two or more groups are compared with one another. These are to evaluate change in a single participant, and to obtain information that might otherwise be lost in a group comparison. A single-subject experiment may be weak in external validity but it gives us valid and reliable information about a single individual (Graziano & Raulin 2000: 301–302).

- The problem of external evaluators is eliminated because each worker does his or her own research.
- The single-system design is easy to use and to understand, and is not disruptive to the treatment process (Royse 2004: 69).
- If the utilisation of this design were to become standard practice in every worker's setting, workers would start thinking more scientifically about problem areas in their clients' lives, and about which interventions are appropriate and how to evaluate solutions. Grinnell and Williams (1990: 250), for example, comment: "We change ourselves in the process of helping our clients to change and, in the process of changing ourselves, we change our profession – staffing it with people who not only want to help but know how to help."
- Evaluation of the effectiveness of the intervention programme in respect of almost every practice situation becomes possible (Bloom et al. 2003: 50–51). Gravetter and Forzano (2003: 351–352) also mention flexibility as an advantage. This approach provides good feedback for practice intervention methods, especially for those that are primarily task centred or problem solving in nature (Yegidis & Weinbach 1996: 252).
- The single-system design is practice based and therapist oriented.
- Modifications in intervention are possible, and practitioner and client can, when feasible, move over to a more appropriate intervention programme.
- The single-system design attempts to work explanatorily and thus to collect qualitative information.
- This design enhances goal directedness in both therapists and clients.
- The single-system design enables a continuous report on the total intervention effort.
- Hypotheses can be tested about the relationship between a specific intervention procedure and changes occurring in the client.

The following disadvantages of the single-system design may be considered:

- It is difficult to present a watertight case for the withdrawal, reversal or modification of treatment, especially when the intervention has shown signs of being successful.
- In order to assert that a certain independent variable has been responsible for an observed change, all other variables should be controlled. Owing to research

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being done in the non-laboratory setting with human beings it is, however, very difficult to control all variables.

- Implementation of the single-system design can be very time consuming. On the other hand, it can be argued that the most time-consuming aspect of this design is to learn how to use it.
- Some researchers may be concerned that the single-system design will supplant classic research procedures. A counter argument is that the single-system design is complementary to and supportive of classic research procedures.
- Single-system studies have a problem with internal and external validity and are simply not as valid as a well-designed group study (Marlow 2005: 88–90).
- The absence of statistical controls can be regarded as another disadvantage of single-system designs (Gravetter & Forzano 2003: 353).
- Generalisations cannot be drawn from single-system designs. Single-group designs are extremely limited in the conclusions that may be drawn from them while the researcher might have unrealistic expectations of the study (Marlow 2005: 112). They basically suffer from a lack of comparison. Without something with which to compare the results, the researcher has problems in drawing conclusions.
- Follow-up studies of cases where the intervention was terminated will have to be done more often in future in order to establish whether the specific intervention strategy which was utilised retains its effectiveness.
- The single-system design can only be used for behavioural changes. However, if the therapist can define the problem and the intervention clearly, and ensure that both problem and intervention will be linked to the goals for intervention in each case, the single-system design may well be used in all such situations.

SUMMARY

In this chapter, it is noted that evaluation can be defined as a general process of weighing or assessing the value of something. Single-system design denotes the study of a single subject on a repetitive basis. This approach is considered the ideal way in which to evaluate the effectiveness of treatment interventions.

Single-system design has the following characteristics: it requires the evaluator to have absolute clarity on the problem to be addressed, and that measures be taken repeatedly from a single participant at regular intervals – both before and after a manipulation. The basic comparison is between the same participant's pre-treatment and post-treatment scores to ascertain whether changes in the problem have occurred prior to, during or after treatment. The concept baseline is unique to single-system design and denotes the data collection period that immediately precedes the implementation of treatment. Single-system design is carried out in different phases according to different possible designs. These different phases and the intervention as such have to be clearly circumscribed. Data analysis is based on a visual presentation of changes in the client's behaviour in the form of graphics and charts.

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SECTION
C

Twelve steps of the research process based on the single-system design are described, as well as certain types of single-system design: the case study linked to the basic single-system design (A-B); basic experimental designs (A-B-A; A-B-A-B; B-A-B); multiple baseline designs and multiple target designs; changing intensity design and successive intervention design; alternating intervention programmes and interaction design.

Advantages of the single-system design include evaluative accountability, cost effectiveness, quick availability of results, compatibility with the treatment process, and encouragement of scientific thinking in practice. Some of its disadvantages include the difficulty in altering or withdrawing treatment if positive effects are measured; difficulties in controlling multiple other variables relating to the single variable under consideration; discrepancies in internal and external validity meaning generalisations cannot be drawn from research results; and the fact that the design applies only to the observation of behavioural changes.

Self-evaluation and group discussion

Select one learner, patient or client you have worked with during the last six months or if you are a student select one from your recent practical placement. Imagine that you have to work out a remedial learning programme, a special nursing programme or a treatment programme for the learner, patient or client. Present the following information to your tutor or study group:

- *Formulate the problem.* Identify the learning, medical or social problem of the particular learner, patient or client for whom a treatment programme is envisaged.
- *Review the literature.* A researcher should be as fully informed as possible about the relevant problem. Present a tentative bibliography.
- *Develop goals and objectives.* Select goals to coincide with the envisaged problem you motivated.
- *Develop hypotheses.* Hypotheses should now be developed to fit the problem as well as the goals and objectives of the planned study.
- *Develop the design.* The design for the total study should now be planned.
- *Define the dependent variables.* The dependent variables for the study should now be formulated.
- *Define the independent variable.* The independent variables should now be formulated in conjunction with the dependent variables.
- *Determine obstacles.* All possible obstacles should be visualised at this stage of the study.
- *Baseline phase.* This phase (A) must now be conducted.
- *Intervention phase.* The baseline phase (A) is followed by the intervention phase (B). Subsequently, a second baseline phase (A) is normally conducted.
- *Analyse the data.* The data should now be analysed in the form of graphs.
- *Report the findings.* The findings of the study should now be written up in a report.

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12

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Quantitative data-collection methods: questionnaires, checklists, structured observation and structured interview schedules

Learning objectives

Studying this chapter should enable the reader to

- acquire a perspective on the aspects of measurement fundamental to quantitative measuring instruments, namely the concepts of measurement, validity and reliability, as well as the different levels of measurement
- become acquainted with structured observation schedules, structured interview schedules, questionnaires and checklists as different types of quantitative data-collection methods.

1. INTRODUCTION

We have now emphasised that a clear distinction exists between a research design and research methodology which includes data-collection methods. Readers are reminded that the research design is the plan, recipe or blueprint for the investigation, and as such provides a guideline according to which a selection can be made of which data-collection method(s) will be most appropriate to the researcher's goal and to the selected design.

Quantitative data-collection methods often employ measuring instruments. In the social and human sciences, "measuring instrument" refers to such instruments as structured observation schedules, structured interviewing schedules, questionnaires, checklists, indexes and scales. It is thus essential that we understand certain concepts and principles that are fundamental to measurement before considering the specific measuring instruments. We shall briefly discuss the following concepts and principles in this regard:

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SECTION
C

- The concept of measurement
- The validity and reliability of measuring instruments
- Levels of measurement

2. ASPECTS OF MEASUREMENT FUNDAMENTAL TO QUANTITATIVE MEASURING INSTRUMENTS

2.1 Measurement

Salkind (2006: 99) refers to Stevens (1951) who classically describes measurement as the "assignment of numerals to objects or events according to rules". Monette, Sullivan and DeJong (2002: 103–104) note that measurement refers to the process of describing abstract concepts in terms of specific indicators by the assignment of numbers or other symbols to these indicators in accordance with specific rules. An indicator is an observation that is assumed to be evidence of the attributes or properties of a phenomenon. It seems therefore as if we measure particular characteristics or properties of a concept or phenomenon and not the phenomenon per se. This is in fact true since most of the concepts or phenomena that are dealt with in the social sciences are of a highly abstract nature. These abstractions thus have to be deconstructed into their attributes so that they become observable. The adequacy of the scores obtained depends on the adequacy of the rules according to which these numbers are assigned.

Grinnell and Unrau (2008: 106) confirm Nunnally and Bernstein's (1994: 3) definition of measurement, namely that "measurement consists of *rules* for assigning numbers to objects so as to represent quantities or attributes numerically", but add that a measurement is our way of describing an object and this description is aimed at informing the researcher to make judgements regarding that object. Practically, this means that we formulate a set of questions about the properties of an object from theory, assign a scaling format to these questions, and obtain data that describe the presence of these properties in our respondents. Since this definition implies that numbers are assigned in a *consistent* manner, it follows that measurement becomes one of the best means of creating objective scientific knowledge that can enhance the professional knowledge base with the empirical evidence that is needed.

To obtain valid and reliable data one must ensure, before implementing the study, that the measurement procedures and the measurement instruments to be used have acceptable levels of reliability and validity. Validity and reliability are two of the most important concepts in the context of measurement.

2.2 Validity and reliability of measuring instruments

2.2.1 Validity

According to Babbie (2007: 146), validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. Salkind (2006: 113) refers to truthfulness, accuracy, authenticity, genuineness and soundness as synonyms for validity, and stresses the fact that these terms describe what *validity* is all about: that the test or instrument you are using actually meas-

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ures what you need to have measured. In other words, as stated by Leedy and Ormrod (2005: 28), "the validity of a measurement instrument is the extent to which the instrument measures what it is supposed to measure".

Thus the definition of validity has two aspects: that the instrument actually measures the concept in question, and that the concept is measured accurately. Obviously, it is possible to have the first without the second, but not vice versa. That is, a concept cannot be measured accurately if some other concept is being measured instead.

How then can a researcher go about establishing the validity of an instrument? To begin with, it is necessary to become accustomed to thinking not of an instrument's validity but rather of its *validities*. This is because validity refers broadly to the degree to which an instrument is doing what it is intended to do – and an instrument may have several purposes which vary in number, kind and scope. One of the most common and useful classification schemes attempting to categorise the validities underlying measurement is content, face, criterion and construct validity.

Content and face validity may be established prior to data collection, while criterion and construct validity are established once the instrument has been used to collect data. In this case the data that were collected by means of the instrument are used to establish its criterion and construct validity.

CONTENT VALIDITY

This is concerned with the representativeness or sampling adequacy of the content (e.g. topics or items) of an instrument. According to Babbie (2007: 147), it has to do with the degree to which a measure covers the range of meanings included within a concept, while Punch (2005: 97) mentions that content validity focuses on whether the full content of a conceptual definition is represented in the measure. In other words, a valid measure would provide an adequate, or representative, *sample* of all *content*, or elements, or instances of the phenomenon being measured. To determine content validity we ask two questions: Is the instrument really measuring the concept we assume it is? Does the instrument provide an adequate sample of items that represent the concept being measured? For example, do the items describing normlessness really describe normlessness? Are the items contained by a scale claiming to measure normlessness an adequate sample of indicators measuring normlessness?

Rubin and Babbie (2001: 194) mention that content validity is established on the basis of judgements; that is researchers or other experts make judgements about whether the measure covers the universe of facets that make up the concept. Monette et al. (2002: 115) refer to this aspect as "jury opinion" and emphasise the fact that, although it is still subjective, it implies that there are more people to serve as a check on bias or misinterpretation, and therefore jury opinion is superior to using individual tests of content validity.

FACE VALIDITY

Gravetter and Forzano (2003: 87) suggest that face validity is the simplest and least scientific definition of validity. It concerns the superficial appearance or face value of a measurement procedure. The relevant question in this regard is: Does the

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measurement technique *look as if* it measures the variable that it claims to measure?

The terms *face validity* and *content validity* are often used interchangeably in research literature, although some methodologists argue that they should not be thought of as synonymous. They claim that face validity is not technically a form of validation, since it does not refer to what an instrument "actually" measures but rather to what it "appears" to measure (i.e. it appears relevant to those who will complete or administer it). Nevertheless, face validity is a desirable characteristic of a measuring instrument. Without it, we may encounter resistance on the part of respondents, which may in turn adversely affect the results obtained. Consequently, it is important to structure an instrument so that it not only measures the attributes under consideration accurately, but also appears to be a relevant measure of those attributes.

CRITERION (OR CRITERION-RELATED) VALIDITY

Criterion validity moves away from subjective assessments of face validity and provides more objective evidence of validity. This involves multiple measurement and is established by comparing scores on an instrument with an external criterion known to, or believed to, measure the concept, trait or behaviour being studied. It is essential in this approach to validation that there be one or more external or independent criteria against which to compare the scores on an instrument. It should be apparent that the criterion used should itself be reasonably valid and reliable. If we choose a criterion that is inaccurate or unreliable, we would be unable to validate our instrument adequately. Unfortunately, valid and reliable criteria may not exist or may not be thoroughly tested. In this case, the one which seems most adequate should be chosen and, if possible, supplemented by other relevant criteria (cf. Gravetter & Forzano 2003: 88; Punch 2005: 97; Salkind 2006: 115).

Another method for establishing criterion validity is by predicting group membership by means of the newly developed instrument. In this case two groups of respondents are used – one group that is assumed or known to possess the attribute being measured and another group that is not. If a correlation between a particular group and a scale score exists then the scale is regarded as having sufficient known groups validity (Grinnell & Unrau 2008: 129; Tredoux & Durrheim 2002: 218).

CONSTRUCT VALIDITY

Of the three major approaches to validation, construct validity is perhaps the most difficult because it involves determining the degree to which an instrument successfully measures a theoretical construct. Any measure exists in some theoretical context and should therefore show relationships with other constructs which can be predicted and interpreted within that context. For example, let us take the construct of intelligence. Based on a theory of intelligence (which has undergone some scrutiny and testing and stands the test of time), intelligence consists of such behaviours as memory, comprehension, logical thinking, spatial skills and reasoning; that is intelligence is a construct represented by a group of related variables (Salkind 2006: 116). If you develop a set of test items based on the construct, and if you can show that the items reflect the contents of the construct, then you are on your way to establishing the construct validity of the test or instrument. The diffi-

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culty, however, arises in part from the highly abstract nature of constructs. As a construct cannot be seen, felt or heard, and cannot be measured directly, its existence must be inferred from the evidence at hand. Typical examples of such abstract constructs that are of concern to caring professionals are empowerment, political conservatism, cohesion, conformity, achievement, motivation, social class, delinquency, prejudice and organisational conflict.

Construct validity is concerned with the meaning of the instrument; that is, what it is measuring and how and why it operates the way it does. It involves not only validation of the instrument itself, but also of the theory underlying it. To establish construct validity, the meaning of the construct must be understood and the propositions the theory makes about the relationships between this and other constructs must be identified. Construct validity is thus based on the logical relationship among variables (Babbie 2007:14).

Construct validation is a lengthy, involved procedure which uses data from a variety of sources. It is a painstaking building process, much like theory construction – an attempt to ferret out the underlying dimensions that an instrument is tapping, and thereby to validate the theory behind the instrument. The complexity of construct validation is mostly due to the fact that theory itself cannot be measured; hence it would be difficult to determine if a construct in fact adequately represents theory. One method that is being used is to compare a measure with variables it is assumed not to correlate with and with variables that it is assumed to correlate with. The results of such comparison then represent two forms of construct validity, namely convergent and discriminant validity. Convergent validity is then represented by variables the measurement strongly correlates with, while discriminant validity refers to variables the measurement instrument weakly correlates with.

Another popular method for establishing construct validity is called factorial validity (Grinnell & Unrau 2008: 129). *Factor analysis* as a procedure is utilised here to determine from the data the number of underlying factors in a questionnaire. This is mostly used in cases where there is some uncertainty as to the exact nature of the dimensions being measured or when the researcher wants to confirm whether the theoretical dimensions are in fact being measured. The procedure determines which items cluster together to measure a particular construct. It also identifies items that do not relate well with the dimension of measurement.

Figure 12.1 illustrates a sample of items as they appear on a measurement scale which measures the construct of power distribution in a family.

Validity implies that the above-stated questions/statements should clearly cluster together as measures of the same construct/dimension. It would also imply that all of the items in the measurement instrument measure the same construct and not something else.

The types of validity we have discussed – face, content, criterion and construct – involve a progression in which each builds on the previous one. Each requires more information than prior ones, but it also provides a better assessment of validity (Monette et al. 2002: 117). As these procedures for establishing validity are rather complex and often not part of the goals or objectives or even interest of most researchers in the caring professions, this topic will be left at that. There are many excellent texts available to the researcher who may be interested in validating instruments.

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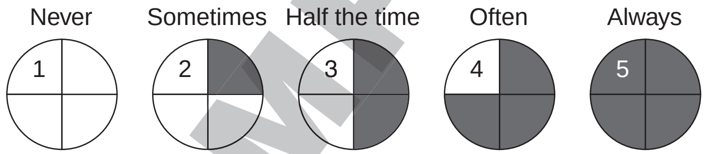
PowerStat©

This scale measures perceptions of family members regarding the distribution of power in family funtioning.

Instructions for completion of the scale
Answer all questions. Do not leave out any questions. Try to answer the questions as quickly as possible. Do not return to any of the questions or change any of the answers. The key to the symbols provided below indicates different options.

Key to symbols: Mark your choice clearly with an ✗



1. Members in my family use violence to resolve conflicts	1 2 3 4 5
2. In our family members get along with each other	1 2 3 4 5
3. Members of our family refuse to talk to each other	1 2 3 4 5
4. A family member forces others to accept an opinion	1 2 3 4 5
5. We have serious differences in our family	1 2 3 4 5
6. We behave respectfully when differences are discussed	1 2 3 4 5
7. An adult female in my family has been abused by an adult male	1 2 3 4 5

SAMPLE

Figure 12.1 Sample of items on a standardised measurement instrument
Source: Roestenburg (1999)

In summary, based on Grinnell and Unrau (2008: 127), when we ask how valid an instrument is, we are really posing three questions:

- How well does this instrument measure what we want it to measure? How well does the instrument measure the theoretical construct we want it to measure (content validity)?
- How well does this instrument compare with one or more external criteria or measures purporting to measure the same thing but not related to a measure that measures something else (criterion validity)?

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- What does this instrument mean – what is it in fact measuring, and how and why does it operate the way it does (construct validity)?

Once the validity of an instrument has been established the researcher may proceed to determine its reliability.

2.2.2 Reliability

Salkind (2006: 106) refers to *dependable*, *consistent*, *stable*, *trustworthy*, *predictable* and *faithful* as synonyms for reliability. Something that is reliable will perform in the future as it has in the past. *Reliability* occurs when an instrument measures the same thing more than once and results in the same outcomes. The reliability of a measurement procedure is thus the stability or consistency of the measurement. This means that if the same variable is measured under the same conditions, a reliable measurement procedure will produce identical (or nearly identical) measurements. In other words, it refers to a measuring instrument's ability to yield consistent numerical results each time it is applied; it does not fluctuate unless there are variations in the variable being measured (cf. Babbie 2007: 143; Gravetter & Forzano 2003: 91).

Although it is rare to have perfect reliability, Neuman and Kreuger (2003: 179–180) as well as Salkind (2006: 108) suggest the following procedures to increase the reliability of measures:

- *Increase the number of items or observations/use multiple indicators of a variable*. Use two or more indicators (e.g. two or more questions in a questionnaire) to measure each aspect of a variable.
- *Eliminate items that are unclear.* An item that is unclear is unreliable; people may respond to it differently at different times.
- *Increase the level of measurement*. Indicators at higher or more precise levels of measurement are more likely to be reliable than less precise measures, because the latter pick up less detailed information. Try thus to measure at the most precise level possible.
- *Standardise the conditions under which the test is taken.*
- *Moderate the degree of difficulty of the instrument.* Any test that is too difficult or too easy does not reflect an accurate picture of one's performance.
- *Minimise the effects of external events.*
- *Standardise instructions.*
- *Maintain consistent scoring procedures.*
- *Use pretests, pilot studies and replications.* Develop a draft or drafts, or preliminary versions, of a measure and test these before applying the final version in a hypothesis-testing situation.

Several procedures exist for establishing the reliability of an instrument, such as the test-retest and alternate-form methods and the split-half technique. The most commonly used reliability measure is Cronbach's Alpha coefficient. This coefficient ranges between 0 and 1, and figures closer to 1 (0.8–0.9) generally indicate a highly

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reliable scale. Since reliability coefficients can be calculated by most statistical packages today, grass-roots researchers are advised to determine the reliability of the instruments they use for research purposes.

In summary, reliability refers in general to the extent to which independent administration of the same instrument (or highly similar instruments) consistently yields the same (or similar) results under comparable conditions. In other words, when we speak of the reliability of an instrument we mean that if the same instrument is used at different times or administered to different subjects from the same population, the findings should be the same (Maree 2007: 215). Reliability is primarily concerned not with *what* is being measured, but with *how well* it is being measured. Obviously, the more reliable our instruments and observations, the more consistent and dependable our results will be. However, high reliability does not guarantee valid results, but there can be no valid results without reliability. The relationship between reliability and validity is thus straightforward and easy to understand: An instrument can be reliable but not valid, but an instrument cannot be valid without first being reliable. In other words, reliability is a necessary, but not sufficient, condition of validity (Salkind 2006: 118).

2.3 Levels of measurement

In measurement, according to Babbie (2007: 136), the attributes composing variables may represent different levels of measurement. A level of measurement is the scale that represents a hierarchy of precision on which a variable might be assessed. The more precise (and higher) the level of measurement, the more accurate the measurement process will be and the closer you will come to measuring the true outcome of interest (Salkind 2006: 100–101).

A distinction is made between different levels of measurement on the basis of the following four features of the numbers assigned in the process: distinguishability (e.g. the number 2 is different from the number 1); order of rank (2 has a higher rank than 1); equal intervals between successively higher numbers; and absolute size. These characteristics form a hierarchy in the sense that the fourth characteristic presupposes the third one, the third one presumes the second one to apply, etc. If the numbers exhibit the feature of equal intervals, there has to be a rank order among them and they have to be distinguishable from each other. Corresponding to each of these four characteristics, a different level of measurement, from lowest to greatest or highest precision, may be distinguished, namely the nominal, ordinal, equal interval and ratio levels of measurement. These four levels of measurement thus represent a hierarchy of precision on which a variable might be assessed (Salkind 2006: 100).

2.3.1 Nominal level of measurement

The simplest level of measurement is nominal measurement. Some authors contend that this is not really even measurement at all. The term *nominal*, in this context, refers to the assignment of names. By means of this process the characteristics of objects can be categorised. Nominal measurement is thus essentially a classification system which involves variables being divided into categories. Characteristics such

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as gender, race, ethnic origin and political affiliation are usually viewed as nominal variables. The use of figures here is not to measure but only to identify, like the numbers on rugby players' jerseys.

Another example is categorising automobiles according to colour, for example blue, green, yellow or red. A certain population of, say, 100 automobiles can be divided into these four categories using such a nominal scale: 20 blue (identified with the symbol 1); 26 green (2); 30 yellow (3); 24 red (4). Obviously, the figure 4 does not denote any value higher than, for instance, the figure 1, as the colour red is not in any way "higher" than the colour blue.

The requirements of nominal-level measurement are simple. A nominally measured variable has to have at least two categories (e.g. male or female) and the categories must be clearly distinct, mutually exclusive and exhaustive. "Mutually exclusive" means that each case can fit into only one category, for example only male or female. "Exhaustive" means that there must be a suitable category for each case (cf. Neuman & Kreuger 2003: 189).

Nominal measurement can only use the simple yes/no scale, where one category indicates the absence and the other category the presence of the relevant characteristic. Literally, the first must contain zero per cent of the characteristic, and the second category 100 per cent. Since very few objects possess characteristics in such an all-or-nothing manner, objects are usually assigned to the first category if they possess none or a negligible amount of the relevant characteristic, and to the second category if they possess a minimal or distinctive amount of the characteristic.

2.3.2 Ordinal-level measurement

Ordinal-level measurement not only classifies observations, but also places them in a ranking order from high to low or from more to less. In other words, it places them in categories which display a greater-than or smaller-than relationship to each other. Variables often measured on an ordinal scale are social class, social distance, attitudes and professional prestige.

Another example often quoted is the first grade at school is simpler than the second; the second grade is simpler than the third grade, but no one can measure the exact differences, and they are definitely not equally different. It is impossible for any school to ever ensure that the increase in the level of complexity of schoolwork between Grade 1 and Grade 2 is exactly the same as that between Grade 2 and Grade 3. But the higher grades are definitely more difficult than the lower ones. The same is true of the higher levels of education such as bachelors, Master's or doctoral degrees.

Similarly, measurement of change (rarely or none of the time; a little of the time; some of the time; a good part of the time; most or all of the time); acquiescence (high, moderate, low); assessments of service effectiveness (very effective, fairly effective, fairly ineffective, very ineffective); assessment of the severity of a problem (very serious, serious, troublesome, a little troublesome) are all examples of the types of variable measurable on an ordinal scale.

Figures used on an ordinal level of measurement enable the researcher not only to indicate differences between categories of variables, but also their relative positions with respect to one another. In nominal measurement we can say that a 2 dif-

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fers from a 1 (e.g. where 2 symbolises female and 1 male), but in ordinal measurement we can say that a 2 not only differs from a 1 but is positioned higher or lower than a 1. Thus, where the figures on a nominal scale represent a classification, those on an ordinal scale represent rank or order. A rank value indicates whether an object possesses more of a particular characteristic than another object. However, it does not indicate how much more. And it is also impossible to ascertain how far apart those objects are positioned from each other in respect of that characteristic. Stated differently, ranking order does not indicate absolute values and also does not indicate equal distances between the categories. Thus we do not know what the exact distances between the categories are, and we also cannot assume that these distances are uniformly equal to each other.

In summary, we can state that ordinal measurement goes a step further than nominal measurement in that observations can be placed in ranking order. The values obtained do indicate relative positions between those observations, but not their absolute quantities or exact distances from each other. Ordinal figures thus indicate ranking order and nothing more.

Because of the rank ordering capability, measurement instruments on an ordinal level are sometimes called indexes rather than scales. The next level of measurement addresses the problem of ascertaining exact distances between the values of observations.

2.3.3 Equal interval level of measurement

This level of measurement is higher than the ordinal level. Interval measurement classifies and places in ranking order, but it also places the characteristics of variables on an equally spaced continuum. Unlike ordinal scales, equal interval level scales have a common measuring unit, for example year or degree of temperature. They indicate exactly how far each ranking order is spaced from the next, in other words the distance between the objects. A figure 1 is exactly as far away from a figure 2 as a 2 from a 3, etc. On an interval scale of intelligence the difference between IQ scores of 100 and 105 is exactly the same as those between 115 and 120. Apart from intelligence and achievement, calendar time, anomie, group morale and social attitudes are variables that are often measured on interval scales.

The starting point of this scale and its apex are arbitrary and thus it does not possess an absolute zero. A Fahrenheit thermometer is a good example. The grades on the thermometer are exactly equal and the difference between a temperature of 38 and 39 is exactly the same as that between 39 and 40. But – and this is important – there is no starting point. The Fahrenheit thermometer does not measure zero degrees, but starts somewhere in the middle. The same is true of IQ scores. No one can possess an IQ of zero – that person would not be alive. All IQ scores start somewhere around 30.

2.3.4 Ratio scale level of measurement

The only difference between the interval level and the ratio level of measurement is the existence of a fixed, absolute and non-arbitrary zero point. When an interval scale also possesses a natural zero point it becomes a ratio scale. Therefore the figures on a ratio scale indicate the real quantities of the characteristic which is meas-

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ured. This scale enables us to say not only that one object possesses so many units more than the next one, but also that the first object is so many times greater or smaller than the next. Typical variables measurable with ratio scales are mass; length; income; birth, death and divorce figures; number of children in a family; distance and age. Something can weigh from nothing up to 1 000 kilograms or more. One can stand absolutely still, and therefore cover a distance of zero kilometres, and then start running for exactly five kilometres. Just before birth one has no age, but at the moment of birth, measurement of one's age commences, and terminates at death.

It is important to keep in mind that although researchers have no control over the nature of a variable, they have some control over how they will define variables. The way a researcher conceptualises a construct can limit how precisely it can be measured, and will therefore also affect the level of measurement. It is sometimes possible to change the level of measurement of a variable by redefining it at the nominal or operational level. Although it is important for researchers to strive for the highest or most precise level of measurement, Babbie (2007: 140) mentions that often it may happen that you need not necessarily measure variables at their highest level of measurement. If you are sure to have no need for ages of people at higher than the ordinal level of measurement, you may simply ask people to indicate their age range, such as 20 to 29, 30 to 39, and so forth.

3. TYPES OF QUANTITATIVE DATA-COLLECTION METHOD

The choice of data-collection methods for the researcher working from a quantitative approach can be categorised into structured observation schedules, structured interview schedules, questionnaires, checklists, indexes and scales. Figure 12.2 illustrates the different data-collection instruments on a continuum from qualitative to quantitative tools. Each type of data-collection method will be described in more detail below.

According to Figure 12.2, qualitative instruments (unstructured interview and observation schedules) are – due their specific application – less structured than quantitative instruments (see chapters 20 and 21). Structured observation schedules, structured interview schedules, questionnaires, checklists, indexes and scales are highly structured devices since the objective is to collect quantifiable data with them. Structured observation schedules, structured interview schedules, questionnaires and checklists will be discussed in this chapter while indexes and scales will be discussed in Chapter 13.

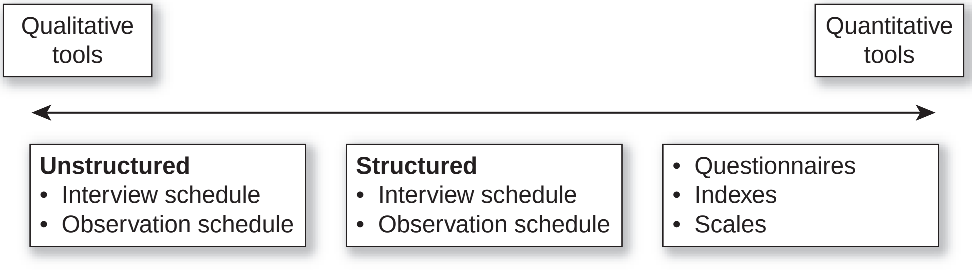

Figure 12.2 Continuum of data-collection instruments

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SECTION C

3.1 Structured observation schedules

Observation schedules have definite value in quantitative application. According to Grinnell and Unrau (2008), observation schedules are used for direct observation of people in their natural environments. They regard this form of observing as the most obtrusive and state that it can be used for individual or group observation purposes.

Observation can further be unstructured or structured. In the case of unstructured observation, observers qualitatively observe behaviours by recording narratives or personal accounts of the situations that they have observed. If structured observation is to be used for descriptive studies or studies that require objective quantitative ratings, a numerical scale and highly specific observation procedures need to be followed.

In structured observation, the target problem for observation or hypothesis is operationally defined as the basis for the structuring or selection of an observation schedule. This observation schedule is then used to directly observe the individual or group, and record quantitative data for analysis purposes.

Validity and reliability are of great concern in structured observation. Both these concepts are influenced not only by the way in which the observation schedule is structured, but also by the method of data recording as well as who records it. Fieldworkers who do observations have to be trained very accurately to ensure high levels of agreement between observers regarding the phenomenon being observed. Reliability is measured by comparing ratings by different observers with each other. An index of inter-rater agreement is obtained as an estimate of reliability. Validity is assessed in the same way as that of scales. Different methods of recording data are interval or frequency recording, duration recording, magnitude recording, time period or spot-check recording, and permanent product recording. Each one of these methods will be briefly discussed.

3.1.1 Interval or frequency recording

This method is preferred when the researcher wants to observe behaviours that occur with high frequency, such as respondents performing a certain task during a specified time period. The observer then records the occurrence of the target behaviour each time it occurs during a specified time interval. An alternative may be that the occurrence of the target behaviour is only recorded if it occurs during the full time interval. An example in research terms would be to observe the occurrence of behaviour responses following a skills training session or where behaviour sequences in interaction between respondents are recorded.

This method is highly precise and rigorous, but costly in terms of time and the intensity of observer training. Observers need to be objective and to reduce bias should not be indigenous to the environment of the sample. An example of an interval recording sheet is provided in Figure 12.3. In this example a minute-by-minute frequency recording is compiled, and every time behaviour occurs that can be classified as “attentive listening” according to a pre-defined description, it is recorded by means of an X next to the appropriate time slot. In this way intervals of behaviour are recorded.

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Behaviour	Time period of 09:00–09:15 observation	
	Time slots	
Attentive listening	09:02	✗
	09:03	✗
	09:04	
	09:05	✗

Figure 12.3 Example of an interval recording sheet

3.1.2 Duration recording

This method can be used in conjunction with interval recording. In this case certain specified behaviours are recorded from onset until the behaviour diminishes. A stopwatch can be used to mark the period during which behaviours are observed. This method is useful in cases where the researcher wants to determine if an intervention makes a difference to respondent behaviours. Before and after measurements are taken by two observers independently. The results are compared and the average between the two observations is used as an index of duration. Reliability in this kind of observation is once again achieved by the level of inter-rater agreement between observers.

In Figure 12.4, as an example of a duration recording sheet, the duration of eye contact is recorded during an interview with a client by a social worker. In this case the duration is measured within one interview, but it should be obvious that these

Behaviour	Time period of 09:00–10:00 observation		Duration
	Start time	End time	Minutes
Eye contact	09:02	09:05	3 min
	09:10	09:12	2 min
	09:15	09:21	6 min
	09:25	09:36	11 min

Figure 12.4 Example of a duration recording sheet

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observations can be done for different interviews, or before training and after training in interview techniques.

3.1.3 Magnitude recording

This form of recording involves frequency, severity or level ratings of behaviours. Observers will rate behaviours on a five-point scale varying, for instance, from “least severe” to “most severe” (see Figure 12.5). Accuracy of recordings can be improved by adequate training of observers and also by combining severity observations with frequency observations. As an example, magnitude recording can be done in community development projects where the researcher wants to record organisational skill application during community planning sessions, or other behaviours as required.

	Committee management skills observation sheet	
	Frequency 1 = Never 2 = Some of the time 3 = Half of the time 4 = Most of the time 5 = Always	**Duration** 1 = 0–1 minute 2 = 2–4 minutes 3 = 5–10 minutes 4 = 10–15 minutes 5 = 15–20 minutes
Task delegation	1	3
Summarising ideas	4	4

Figure 12.5 Example of a magnitude recording sheet

In the example in Figure 12.5, different tasks after presentation of a management development programme are being recorded. The observation schedule rates the frequency and duration of the different behaviours and, at the end of the session, an index of magnitude can be compiled by adding up the two category scores.

3.1.4 Time period or spot-check recording

In this method, the researcher will do observations during specified time periods. The objective of recording is to ascertain whether a specified behaviour occurs during the observation time or not. Such recording can assist the researcher in determining the occurrence and non-occurrence of a specific behaviour. This method is most suitable for high-frequency types of behaviour such as conflict behaviour. Reliability in this method can be enhanced by accurate sequencing of observation periods of two or more observers.

3.1.5 Permanent product recording

This method is focused on recording the end products of behaviours rather than the behaviours themselves. Cases such as client records, completed tasks or work prod-

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ucts are examples of outcomes that can be observed. The researcher will conduct the observation by using a structured checklist or schedule containing statements reflecting the desired end state to be observed. An advantage of this form of recording is that it can be done after completion of the task when the observer is at leisure, thus the observer is not under pressure to observe the behaviour while it is occurring. For example, the case records at a social work agency can be recorded by using a standard of completion as an observation schedule. These observations can be repeated several times or at regular intervals to ascertain whether activities as specified in the file improve over time. Since this method is more product focused and less process focused, the researcher should consider combining it with other methods of observation. Reliability is once more established by the amount of agreement between different observers, each using the same schedule. An example of permanent product recording is provided in Figure 12.6.

Q no.	Question	Options	Code	Page in file
1	Area	Johannesburg	1	
		Northrand	2	
		Sedibeng	3	
		Ekurhuleni	4	
		Mogale	5	
2	Time	1995	1	
		2006–2007	2	
3	Gender	Male	1	Page 1
		Female	2	
8	Behaviour at school	Missing classes	1	Page 3
		Disruptive behaviour	2	
		Criminal activities at school	3	

Figure 12.6 Excerpt from a permanent product recording schedule

Source: Roestenburg (2008) (used with permission of W. Roestenburg, 2008)

This example was taken from a study on the perceptions of youth regarding crime in Gauteng (Roestenburg & Oliphant 2008). The complete observation schedule was used to log data from a sample of case files at different service organisations. The case files all contained a standard intake form covering what was used to design the observation schedule. The data were electronically captured on a spreadsheet. Column 1 shows the question number; column 2 the different variables based on the headings in the file; column 3 the categories to be used for classifying the data; column 4 the numerical codes that were used; and column 5 the page in each file where the data will be found. Several fieldworkers were trained to log the data on spreadsheets by means of the permanent product recording sheet. A fieldworker had to read the contents for each question in the file, choose a category and type the appropriate code in the spreadsheet.

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SECTION C

3.2 Structured interview schedule

A structured interview schedule is in the format of a questionnaire. In this format the fieldworker reads the questions to the respondent as they appear on the questionnaire and records the respondent's response on the questionnaire. Structured interviews are usually conducted with one respondent at a time. This type of data-collection method has the advantage that the fieldworker has more control over the response rate. Respondents are more likely to respond since they do not want to disappoint the fieldworker. This type of data collection is specifically suitable in cases where respondents have low literacy rates or find it difficult to read and complete a questionnaire. The disadvantages are that this method is time consuming, and respondents may be reluctant to answer accurately in the presence of the interviewer.

3.3 Questionnaires

Babbie (2007: 246) defines a questionnaire as "a document containing questions and or other types of items designed to solicit information appropriate for analysis". Although the term *questionnaire* suggests a collection of questions, a typical questionnaire will probably contain as many statements as questions, especially if the researcher is interested in determining the extent to which respondents hold a particular attitude or perspective (Babbie & Mouton 2001: 233). The basic objective of a questionnaire is to obtain facts and opinions about a phenomenon from people who are informed on the particular issue. Questionnaires are probably the most generally used instruments of all.

Questionnaires differ from scales in that they are usually not standardised, contain a wide range of items and are products of the scientist's creative efforts or theoretical conceptualisations. One can say that a questionnaire is in the early stages of design. Questionnaires may be refined or validated during the research project they were designed for and may even become the basis of a future scale. However, questionnaires and scales are not the same, mostly because questionnaires have not been exposed to rigorous standardisation procedures.

Different types of questionnaire can be identified, an overview of which is presented below.

3.3.1 Types of questionnaire

■ MAILED QUESTIONNAIRES

A mailed questionnaire is, according to Grinnell and Unrau (2008: 288–291), a questionnaire which is sent by mail with the expectation that the respondent will read the instructions, answer the questions and then return it to the researcher. However, this does not always happen, as the response rate is normally low, often around 30 per cent. If initial mailings are followed up, this percentage may increase to as high as 70 per cent (Rossouw 2003: 129).

The researcher compiles the questionnaire and it is accompanied by clear, carefully worded instructions at the level of understanding of the target population to be reached. The first section of a mail questionnaire must be designed in such a way that it is not threatening and creates a professional and interesting impression.

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What is important here is that the respondent and the researcher are physically removed from one another, and the questionnaire is the only communication channel between them.

The advantages of the mailed questionnaire are that the costs are relatively low, the respondent enjoys a high degree of freedom in completing the questionnaire, and information can be obtained from a large number of respondents over a wide geographical area within a brief period of time. What is most important is that in mailed questionnaires the same stimuli are offered to all respondents and the possibly "contaminatory" influence of a fieldworker is eliminated. A mailed questionnaire must therefore be carefully organised because explanation by a fieldworker is not available. Mailed questionnaires also offer anonymity, and respondents can complete the questionnaire at a convenient time and can check personal records if necessary.

However, the mailed questionnaire also has certain limitations. As already mentioned, the non-response rate may be very high, especially with regard to long questionnaires and unclear or open questions. Complex questionnaires requiring in-depth thought will also show a low response rate. Some questions in mailed questionnaires are often left unanswered or are wrongly interpreted, and this is difficult to deal with. No control to ensure that the right person in the household completes the questionnaire, and lack of access to mail delivery and high rates of illiteracy on the part of respondents are also serious disadvantages.

The appearance of the mailed questionnaire should encourage the respondent to complete it. The investigator must do everything in his or her power to raise the response rate, for instance by preparing the respondents for the study by means of a newsletter or to avoid sending questionnaires during major holiday periods. The sending of reminders and the inclusion of a letter of explanation and a self-addressed, stamped envelope are also conducive to a higher response rate.

TELEPHONIC QUESTIONNAIRES

With the telephonic questionnaire the respondents are phoned by interviewers, who ask the questions and record the answers (Maree & Pietersen 2007: 157). Although the telephonic questionnaire is categorised as a type of questionnaire, from a methodological point of view it is more a type of structured interview schedule, as the researcher asks the questions telephonically through a person-to-person interview.

The telephonic completion of a questionnaire has certain advantages. The fieldworker gets an opportunity to clarify questions that are not clear to the respondent, literacy is not a requirement, and the response rate is usually high because respondents do not easily refuse. The telephone survey enables researchers to gather data quickly, allowing immediate investigation of an event, rather than weeks after the fact when memories are stale. Though expensive, the telephone survey still costs less than field interviews. Finally, this method is convenient as the researcher can gather data from widely dispersed populations without leaving the office.

A major limitation, however, is the cost of long-distance calls. For most research, this constraint limits the length of interviews. Also, because not everyone has a telephone, bias can creep into the sampling because only households with telephones can be reached. For these reasons, telephone interviews should be used

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mainly for exploratory rather than in-depth research. Another potential problem for telephone interviewing is the prevalence of answering machines, and phone lines being tied up by faxes and Internet access (Babbie 2007: 270).

The costs can increase substantially when the sampling is extended further than the researcher's local telephone zone and if the interview lasts a long time. Complex, contentious and sensitive matters cannot easily be covered in a telephonic interview, since silences or stuttering may cause embarrassment. Many people may be unmotivated and sceptical regarding the purpose of the investigation and the people involved, since telephone harassment is common nowadays. If the questionnaire is too long or too contentious, the respondent may end the interview by simply putting down the receiver (cf. Gravetter & Forzano 2003: 172; Rossouw 2003: 130).

Questionnaires completed telephonically must contain comprehensive instructions because fieldworkers do not have the opportunity to consult separate manuals while they are busy asking the questions. The effectiveness of telephone surveys can be improved by making follow-up calls until a respondent is reached, keeping the interview short and using well-trained interviewers.

QUESTIONNAIRES DELIVERED BY HAND

Sometimes fieldworkers deliver questionnaires by hand, so that respondents can complete them in their own time, and then collect them again later. It is important that an appointment be made for collecting the questionnaires again, and this should preferably be not more than 48 hours after delivery. By handling questionnaires in this way much time is generally saved. Response rates are raised because of the personal contact on the one hand, and the fact that the fieldworkers merely distribute the questionnaires and do not bother the respondents at an inconvenient time. Respondents who are seldom at home and are thus difficult to reach may also be involved in this way.

If respondents experience some difficulties with the questionnaire, they can clarify the matter with the fieldworker on his or her return. Sometimes it may be feasible to leave the questionnaire in a mailbox or under a door, and to arrange by note that the respondent places the completed questionnaire where the fieldworker can fetch it. In such a case there is absolutely no personal contact, which may be either positive or negative.

The hand-delivered questionnaire also has limitations. High costs and the fact that a smaller geographical area can be covered per occasion because fieldworkers have to return to collect the completed questionnaires are important disadvantages. On occasion a fieldworker may find that the respondent has simply lost the questionnaire or did not complete it. In such cases the fieldworker must distribute a second questionnaire or complete it directly and personally in the presence of the respondent. Issues of literacy, visual capacity and writing competence are also relevant to the hand-delivered questionnaire.

SELF-ADMINISTERED/INDIVIDUALLY ADMINISTERED QUESTIONNAIRES

In such cases questionnaires are handed to respondents, who complete them on their own, but the researcher is available in case problems are experienced. The researcher (or fieldworker) limits his or her own contribution to the completion of the questionnaire to the absolute minimum. The researcher thus largely remains in

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the background and can at most encourage respondents with a few words to continue with their contribution, or lead them back to the subject.

GROUP-ADMINISTERED QUESTIONNAIRES

In this case, respondents who are present in a group each complete a questionnaire or questionnaires on their own. Preferably, each respondent should receive the same stimulus and complete his or her own questionnaire without discussion with the other members of the group. Sometimes the fieldworker conducts a discussion with the whole group and then, after the discussion, completes the questionnaire him- or herself according to the indications of the group, or lets one of the group members complete it for the whole group. The latter method must be reserved for exceptional situations, since it is possible that a highly verbal member of the group will take over as spokesperson for the group and express opinions which may not reflect those of the group. This can obviously result in bias.

In the group-administered questionnaire, each respondent in the group completes the questionnaire, while the fieldworker is present to give certain instructions and clarify possible uncertainties. The main advantage of this method is that a significant amount of time and cost are saved since a whole group of respondents completes the questionnaire at the same time, they are handled simultaneously and consequently also exposed simultaneously to the same stimulus.

There may, however, also be disadvantages to this method. Obtaining a suitable venue and a time slot which suits all respondents may create substantial problems. Even if respondents complete their questionnaire independently, some degree of mutual influence may occur among them. Some people may experience difficulties in understanding certain questions and instructions, but because they are too embarrassed to ask for clarification in the group, they may answer the questions arbitrarily – which can also affect the validity of the data. This method is quite useful in studies at the workplace as it would be easier to arrange respondents in a group setting.

ELECTRONIC QUESTIONNAIRES

Grinnell and Unrau (2008: 298) propose three main types of electronic survey. The first is the e-mailed survey in which the researcher sends an e-mail with an attached questionnaire for the respondent to complete. The second is the web-based survey that requires the respondent to complete the questionnaire online through a website. The third method concerns the use of computerised interactive voice response (IVR) systems and relies upon automated telephone calls. Another type of electronic data collection can be added in which the researcher conducts a structured interview but records the respondent's responses on an electronic database. In this case the fieldworker enters the data on behalf of the respondent by using a desktop, laptop or handheld (palm) computer. Another type of electronic survey is the touch screen option where the respondent indicates choices by touching areas on the computer screen instead of having to use a keyboard or mouse.

In essence, electronic surveys do away with paper-based questionnaires by entering the data directly into an electronic computerised database. This method eliminates the need for separately transferring the data from each paper questionnaire into a database, a disadvantage of using paper-based questionnaires. An advantage

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of electronic questionnaires is that the data are directly entered into a database, mistakes are limited and the use of paper is eliminated. However, with the latter the value of a paper trail for validation purposes is also lost. However, several electronic verification techniques exist that fulfil the verification role of paper questionnaires. Another advantage of using computers is that data can easily be collected from remote areas by using the Internet, cellphone or 3G technologies. In these cases data are simply transmitted to a central database where they are immediately available for analysis. In this way most of the potential errors associated with data collection are virtually eliminated. A disadvantage is that illiterate respondents may be less familiar with using a computer and that many people still do not own computers or do not have access to the Web. Web-based questionnaires may become so long and complicated that some computers may be unable to process complex questionnaires. Web questionnaires also require more complex programming skills.

To summarise, there are no hard and fast rules for selecting the type of questionnaire, and each researcher must assess which will be suitable for the type of investigation and for the purpose of the research. The choice of method is often a matter of experience and factors such as time limitations, financial aspects and availability of manpower and infrastructure. Grinnell and Unrau (2008: 300) argue that the main consideration influencing the choice of method concerns a calculated risk in terms of response rate. The central questions may well be: How many responses will a particular method generate? Will the respondents be able to associate with the method of choice? How likely is it that sufficient respondents will return the questionnaires? There are also practical factors which can obstruct the fieldwork or even make it impossible to execute, such as political unrest or an unsuitable physical or social environment. What is often forgotten is that self-completed questionnaires can only be used if respondents can read and can be motivated to read the questions carefully and respond honestly, and if they are knowledgeable on the issues which are addressed in the questionnaire. The researcher should consistently use one type of questionnaire and not attempt to use combinations of types of questionnaire in the same study since each type renders a different type of data set.

The researcher should remember that a standardised questionnaire should be the first choice whenever possible. A large number of questionnaires developed in previous research projects already exist and their utility and feasibility should also be considered first before yet another new questionnaire is compiled. If there is merit in the development of a new questionnaire, this must be done with the necessary knowledge of the relevant subject, as well as of the principles of questionnaire construction.

3.3.2 Principles of questionnaire construction

A number of basic principles must be taken into consideration when a questionnaire is developed. Some of these are discussed below.

INFORMATION NEEDED

Before the researcher can decide on the nature of the questionnaire, there must be clarity on precisely what information is to be obtained. This is determined by the central concepts of the study and the way in which these concepts are opera-

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tionalised in practical and measurable components (Grinnell & Unrau 2008: 110). The operational definitions of the main concepts are normally found in a literature study of a research project. Researchers often find it difficult to convert abstract concepts into practical, measurable constructs. They are often tempted to measure everything and in the process lose focus. By using the example referred to earlier (see Figure 12.1), if we want to measure the concept "power management" we first need to operationalise the concept from literature. Table 12.1 shows a three-column guideline that has been found to facilitate the operationalisation of concepts into practical dimensions of measurement. The first column shows the key concept to be defined; the second provides a list of elements regarding the key concept, obtained from literature definitions; and the third provides indicators for those definitional elements. An indicator in this case can be described as a pointer or a statement of how a concept may be observed in reality. The indicators in the third column are already in statement format for use in a questionnaire. Items in questionnaires may be formulated either as questions or as statements and may either be "negatively" formulated as in item no. 1, or "positively" as in item no. 2. It is a good idea to keep the number of positive and negative questions balanced, in other words include not just one type of question format, but ensure that both types appear in the questionnaire.

The advantage of using the above format for question formulation is that there is a greater chance that items will reflect the concept more accurately. In other words, the questionnaire will have improved *face validity* before the study commences. It also prevents the researcher from adding questions that are not relevant to the study or do not reflect the concept being measured. Table 12.1 also provides evidence of the way in which items were selected for the purposes of the study.

WRITING THE QUESTIONS

Writing the questions for a questionnaire (also for an observation schedule, structured interview schedule or checklist) is a process that requires not only creative

Table 12.1 Example of a conceptual operationalisation

Key concept	Key operational definitions (elements)	Indicators
Power management problems	• Violent conflict resolution • Parental control of child behaviour • General household discipline • Mutual respect • Abusive behaviour • Disintegration	1. Family members use violence to resolve conflicts 2. In our family, members get along with each other 3. Members of our family refuse to talk to each other 4. Some members force others to accept an opinion 5. We have serious differences in our family 6. My family discusses differences in a respectful manner

Source: Roestenburg (1999)

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thinking by the researcher, but also a high level of precision. There are certain basic principles for formulating the questions of a questionnaire:

- Sentences should be brief and clear, and the vocabulary and style of the questions should be understandable and familiar to the respondents.
- Items expressing a certain idea may be repeated using different wording to ensure that respondents understand the idea being measured.
- Question and response alternatives should be clear and not reflect the bias of the researcher.
- Every question should contain only one thought.
- Every question should be relevant to the purpose of the questionnaire. This implies that each question should reflect the concepts of the study.
- Abstract questions not applicable to the milieu of the respondents should rather be avoided. Researchers should also not take for granted that respondents will have knowledge about a subject.
- Examples or situations referred to by an item should be appropriate for the cultural context of the respondent. Researchers should carefully consider the cultural context or seek advice from persons in that culture before designing items.
- Questions should preferably be formulated in the language of the respondents. Failure to do so may contribute to lack of validity.
- Questions should be pitched at the right reading level in accordance with the expected reading level of the respondents. Researchers may have to seek advice from linguists to ensure the appropriate reading level is used. A general rule of thumb is to keep the number of words in a question between seven and 11 while the number of questions per dimension should be a minimum of five and a maximum of 16. Fewer questions and shorter sentences will be easier to understand.
- The sequence in which the questions are presented should aim to present general, non-threatening questions first, and more sensitive, personal questions later.
- The following tips should be kept in mind:
  - Avoid leading and biased questions.
  - Avoid negative questions.
  - Carefully consider the length of questions, giving preference to shorter ones.
  - Avoid loaded phrases that suggest certain responses.
  - Make response categories easy to remember.
  - See that the response categories offer a real range of alternatives.
  - Avoid jargon, slang and abbreviations.
  - Avoid emotional language.
  - Avoid double-barrelled questions. Each question must focus on only one topic.

The researcher should be wary of wanting to include questions merely because they are interesting or noteworthy. On the other hand, more than one report or journal article can be written from one questionnaire, and thus more questions can be included than merely those that will be processed immediately. However, the prospective researcher must be able to determine the potential usefulness of every

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question, and should therefore have made a thorough literature study on the subject under review.

LENGTH OF QUESTIONNAIRE

The next decision in questionnaire construction concerns its length. On the one hand, the questionnaire should be brief, including only those questions which are absolutely necessary to collect all the relevant information. On the other hand, it should be long enough to incorporate all the questions so that a situation does not arise later where information is missing or where a concept is inadequately represented in the number of items in the measurement tool. It is also important to work according to a principle of economy so that respondents can communicate as much information as possible in the briefest possible time. It remains a fine art to gain the maximum amount of information with the minimum number of well-structured questions, while keeping within the objectives of the investigation. A general rule of thumb is to over-sample the number of items and then reduce the final measurement instrument tool during factor analysis.

THE FORMAT OF THE QUESTIONNAIRE

The format of the questionnaire will be influenced by whether it will be a mailed, telephonic, group-administered or other type of questionnaire, as well as where, under what circumstances and by whom it will be completed. All questionnaires should, however, be accompanied by a covering letter, which serves to introduce and explain the questionnaire to the respondent. This must be carefully drafted to include all necessary information and to motivate the respondent to complete the questionnaire. According to Monette et al. (2002: 169–171), the following items must be included in the covering letter: sponsor of the research, address and telephone number of the researcher, how the respondent was selected, who else was selected, purpose of the research, who will benefit from the research, an appeal for the person's cooperation, how long it will take the respondent to complete the questionnaire, payment or any other incentive, and assurance of anonymity and confidentiality, as well as a deadline for returning the questionnaire. The covering letter must, in all circumstances, be an integral part of the questionnaire and may constitute its first page.

Grinnell and Unrau (2008: 288) advise that a covering letter should introduce the study in a credible way by stating the name of the organisation doing the research. It should also be personalised and interesting, and should reflect how the data will be managed responsibly. Figure 12.7 provides an example of a covering letter. Notice that the letter is short, clear and informative, and written in a responsible way.

The format and layout of the questionnaire is just as important as the nature and wording of the questions asked. Questionnaires should be clear, neat and easy to follow. According to Rubin and Babbie (2001: 216), an inadequately laid-out questionnaire can cause respondents to miss questions, confuse them about the nature of the data desired and, in the worst case, lead them to throw the questionnaire away. Give each question a number, and never cramp questions together or abbreviate them in order to shorten the questionnaire. Neuman (2006: 295) states clearly that "a professional appearance with high-quality graphics, space between ques-

Research project

Family resilience

by
Social Work Honours class of 2008
University of Johannesburg

Dear Sir/Madam

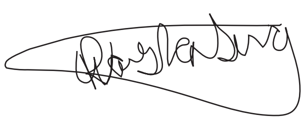
The way in which family members bounce back after a crisis is of great importance to the profession of social work. You have been selected to participate in a research project by the department of social work, University of Johannesburg on the family's abilities in solving difficult circumstances in life. In this survey a fieldworker will ask you a number of questions that you are kindly requested to answer as accurately as possible. These questions are about you and your family's responses to difficult situations in life.

Your participation in this research is completely voluntary and you have the right to withdraw at any time if you do not want to continue with the questionnaire. Your responses are also confidential and anonymous. There is no place where we ask you your name or any other information that could identify you. Nobody but the project coordinator of this project will have access to the information you provide.

Your participation in this project is appreciated and will assist the researchers in improving services to families in future. The name of your fieldworker is Lerato and you are welcome to ask her any questions that you may have regarding the questions you will be asked. Completing the questionnaire will take about 30 minutes.

Should you have any further questions about the research you are welcome to phone the project coordinator: Dr W Roestenburg at 083 575 7059

Thank you very much



Dr W Roestenburg
Project coordinator

Figure 12.7 Example of a covering letter

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tions, and good layout improves accuracy and completeness and helps the questionnaire flow".

Give respondents clear and precise directions and instructions on answering questions. If you want respondents, for instance, to put an X in a box corresponding to their answer, tell them precisely to do so. Questionnaires often contain sets of questions requiring different ways of answering. At each place in the questionnaire where the format changes, additional directions should be included. It is recommended that all instructions should be printed in a different style from the questions (e.g. different colour, font or all in capitals) to distinguish them (cf. Babbie 2004: 251; Neuman 2006: 295).

PILOT TESTING THE QUESTIONNAIRE

In all cases it is essential that newly constructed questionnaires, those in their semi-final form, be thoroughly pilot tested before being utilised in the main investigation. This ensures that errors of whatever nature can be rectified immediately at little cost. No matter how effective the sampling or analysis of the results, ambiguous questions lead to non-comparable responses, leading questions lead to biased responses, and vague questions lead to vague answers. In this regard, Babbie (2004: 256) recommends that it is better to ask people to complete the questionnaire than to read through it looking for errors. All too often, a question seems to make sense on a first reading, but it proves to be impossible to answer.

Usually pilot testing achieves two objectives: firstly, to improve the face and content validity of the instrument, and secondly, to estimate how long it takes to complete the questionnaire. A pilot test is also conducted on either potential respondents to assess reading levels or on experts when the emphasis is more on improving the content.

Only after the necessary modifications have been made following the pilot test should the questionnaire be presented to the full sample. Space should also be left on the questionnaire for comment or evaluation of the questionnaire by the fieldworker and/or the respondent. In this manner researchers obtain a general impression of the feasibility of their questionnaire and the data they have obtained.

WAYS TO ENSURE COMPLETION OF THE QUESTIONNAIRE

When the questionnaire has been completed, the researcher must find ways to ensure an acceptable response rate. For mailed questionnaires, a stamped, addressed envelope should be enclosed. Follow-up letters or postcards can be mailed to those who have still not reacted two or three weeks after the original questionnaire was mailed. A second follow-up request, and even telephonic requests, can be considered. Another strategy is to give questionnaires to a captive audience (such as clients in a waiting room or parents at a school meeting), allowing time for completion and immediate collection.

Neuman (2006: 298) adds the following ways to increase mail questionnaire responses:

- Address the questionnaire to a specific person, not to "Occupant".
- Do not send questionnaires during major holiday periods.

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SECTION
C

- Respondents are more motivated to complete the questionnaire if it has a neat, attractive layout and reasonable page length, and is professionally printed and easy to read, with clear instructions.

DATA ANALYSIS

In view of the comprehensive work involved in the classification and analysis of data collected in large investigations, mechanical and electronic facilities are utilised as far as possible. In order to use the computer in the analysis of data, the questionnaire should be compiled in a certain manner, for example it should incorporate item numbers that can be used in a data set. The researcher can also divide the questionnaire into different sections in order to facilitate the eventual processing of the data. Possible problems due to the numerical format of questions are best anticipated and resolved before data collection, as these are more difficult to solve once the data have been collected. The requirements in this regard will depend on the computer package and statistical consultation utilised in the analysis of the data. Each questionnaire should be numbered and this number should be transferred to the computerised database to keep track of the data source once it has been transferred.

It is important for the researcher to decide on the methods or facilities of data analysis while constructing the questionnaire, as the actual processing of the data and the consequent analysis might be seriously influenced by the questionnaire not being constructed in a specific manner.

An example of a questionnaire tailored for data analysis by computer is given in Figure 12.8.

RESPONSE SYSTEMS

A variety of response systems or question types exists from which the researcher must select in a goal-directed manner in order to obtain the desired information. The following types of question are discussed in this section: open questions, closed questions, dichotomous questions, multiple-choice questions, ordinal questions, completion questions, scaled questions, statements, matrix-type questions and follow-up questions.

- *Open questions.* These questions give the respondent the opportunity of writing any answer in the open space. According to Neuman (2006: 287), open questions permit an unlimited number of possible answers, adequate answers to complex issues, and creativity, self-expression and richness of detail. Open questions may thus be best if the researcher wants to learn how the respondents think, to discover what is really important to them, or to get an answer to a question with many possible answers. Information obtained in this manner can later be divided into several sections. The questionnaire used in the pilot study usually contains more open questions which, when processed, can be used as closed categories in the main investigation. The open question has advantages when a variable is relatively unexplored or unknown to the researcher. In such a case the open questions will enable the researcher to explore the variable better and to obtain some idea of the spectrum of possible responses.

  When a questionnaire with many open questions is used, it becomes essential

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HIV and AIDS

This questionnaire is aimed at determining your knowledge and attitudes with regard to HIV and Aids. You are requested to answer each question and reflect your true reaction when doing so. Indicate your choice by marking the appropriate block with an X.

For example:

Male	1
Female	X

The questionnaire is completed anonymously and will take approximately ten minutes of your time. Thank you kindly for your cooperation.

Case number ☐☐☐ | For office use only

Card number ☐☐

1. Age

15–20 years	1
21–30 years	2
31–40 years	3
Over 40 years	4

2. Gender

Male	1
Female	2

3. Do you regard your knowledge about HIV and Aids as:

Excellent	1
Good	2
Average	3
Poor	4
Very poor	5

Figure 12.8 An example of a questionnaire tailored for data analysis by computer

to select and train well-qualified, motivated fieldworkers. All questions must be interpreted similarly by all. The respondents must be stimulated to think the questions over and the responses must be written on the questionnaire as fully

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as possible. Many open questions lengthen the time of completion, and respondents may be tempted to leave notes incomplete, which decreases the real value of the data obtained from the questionnaire.

A large number of open questions also lengthens the time necessary for the processing of the data. Coding of open questions with a view to computer processing is very time consuming. When it has to be done with a large number of questionnaires it requires special perseverance and reliability, and a fine feeling for emphasis shifts in the responses from the coders. After this it also needs to be cross-coded, and in many cases project leaders themselves have to make the final decisions. Inclusion of many open questions in the questionnaire therefore makes it more expensive, more time consuming and error prone.

However, open questions also have advantages. According to Neuman (2006: 287), they allow respondents to answer in detail and to qualify and clarify responses, and make space for unanticipated findings to be discovered. They also reveal the respondent's logic, thinking process and frame of reference.

- *Closed questions.* According to Maree and Pietersen (2007: 161), a closed question provides for a set of responses from which the respondent has to choose one or sometimes more than one response. These questions offer the respondent the opportunity of selecting (according to instructions) one or more response choices from a number provided. The closed question is advantageous when a substantial amount of information about a subject exists and the response options are relatively well known. In this regard, Monette et al. (2002: 163) state that "[i]n general, closed-ended questions should be used when all the possible, theoretically relevant responses to a question can be determined in advance and the number of possible responses is limited".

  The degree, frequency and comprehensiveness of a phenomenon can be ascertained quite meaningfully by means of closed questions. If a relatively large sample is used, closed questions are very valuable. Closed questions are also advantageous in that the result of the investigation can become available fairly quickly.

  Other advantages of closed questions are that respondents understand the meaning of the questions better, questions can be answered within the same framework, responses can consequently be compared better with one another, answers are easier to code and statistically analyse, response choices can clarify question meaning for respondents, there are fewer irrelevant and confused answers to questions, and replication is easier (Neuman 2006: 287).

  The most important disadvantages of closed questions are that they can suggest ideas that respondents would not otherwise have had; respondents may be frustrated because their desired answer is not a choice; misinterpretation of a question may go unnoticed; and they may force respondents to give simplistic responses to complex issues (Neuman 2006: 287).

- *Dichotomous questions.* These have only two response possibilities, for example "Yes/No" (Figure 12.9) or "Feel that way/Do not feel that way". This kind of question must be kept to a minimum. They lengthen the questionnaire excessively because they have to be followed by questions further exploring both response options.

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Have you used the university's library services before?

Yes	No
1	2

Figure 12.9 An example of a dichotomous question

- *Multiple-choice questions.* It is usually better to use multiple-choice questions from the beginning. In these questions three or more response options are offered, with the "other" or "not applicable" option of the dichotomous question as one response possibility. This type of question is normally used to obtain information that can be logically divided into hard and fast categories. The more categories provided, the finer the differences that can be observed. If certain categories evoke little response, they can be added to others at a later stage. However, the researcher should be wary of too many fine divisions because they become less discrete. An example of such a multiple-choice question is given in Figure 12.10.

Faculty with which you are involved at present (mark one):

Arts and Philosophy	01
Mathematical and Natural Sciences	02
Law	03
Agricultural Sciences	04
Economics and Political Sciences	05
Theology	06
Engineering	07
Education	08
Medicine	09
Dental	10
Not involved with the university	11

Figure 12.10 An example of a multiple-choice question

- *Ordinal questions.* This type of question is used to assign values to a series of aspects by placing them in a certain order, for example in order of importance, urgency or seriousness. Respondents often find it difficult to arrange the in-between priorities properly, while they have no problem with determining the

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highest and lowest priorities. Here the researcher must also beware of too many categories (see Figure 12.11).

> Arrange the following five characteristics of a questionnaire in order of importance. Assign the numbers 1 to 5 to the open spaces next to each characteristic. Number 1 indicates the most important characteristic, 2 the second most important one, etc. (Please assign all five numbers.)

A questionnaire must be easy to read	
A questionnaire must be simple and neatly structured	
Language must be accurate and clear	
There should be clear instructions	
A question must never be spread over two pages	

Figure 12.11 An example of an ordinal question

- *Completion questions.* In reality, this is a type of open question used to collect data about which too many response options exist to classify them meaningfully (see Figure 12.12).

> I like my present job because … (please complete the sentence)
>
> ____
>
> ____
>
> ____

Figure 12.12 An example of a completion question

- *Scaled questions.* This kind of question is a type of multiple-choice question. The response categories are designed in such a way that respondents mark a certain point on a scale. It is difficult to get intervals exactly equal and people also do not assess the degree of difference between categories similarly. A scaled question, however, is useful for obtaining information about non-exact and more subjective aspects, for example the degree of satisfaction about a certain service at a service centre for the aged. The researcher must be careful not to follow the same sequence from positive to negative throughout the questionnaire, as alternation is necessary to decrease bias. An example of a scaled question is given in Figure 12.13.

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How do your children behave towards you?

Mainly unsympathetically	1
Unsympathetically	2
A little unsympathetically	3

Figure 12.13 An example of a scaled question

- *Statements.* These are mainly used to obtain data of a subjective nature, for example about dispositions, attitudes and opinions. A variety of statements related to the relevant matter is presented simultaneously to the respondent, and the response options are offered dichotomously or scaled. Statements should be stated alternately in a positive and negative manner, without a rigid sequence. Statements should also not be formulated in such a way that the respondent gains the impression that a certain kind of response is in reality more acceptable than another (see Figure 12.14).

Mark either "Agree" or "Do not agree" for each response option.

	Agree	Do not agree
Parents must apply more discipline	1	2
Children must enjoy more freedom	1	2
Children should receive pocket money	1	2
Parents must take a stronger stand	1	2

Figure 12.14 An example of statements in questionnaires

- *Matrix-type questions.* In this type of question a variety of interrelated questions is handled in a single question. Much space is saved on the questionnaire itself. For example, in the matrix-type question the name, age, gender and educational level of each child in the household can be obtained simultaneously in one question (see Figure 12.15).
- *Follow-up questions.* These were referred to above in that they are specifically applied to obtain more information about a response to a previous question. The follow-up question should have a funnel-like effect; that is, it should lead to more in-depth knowledge and to finer detail. Grinnell and Unrau (2008: 284) advise that less-sensitive questions be asked first before moving on to more sensitive ones. This order has the effect that respondents are prepared for what comes and

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SECTION C

Please indicate the name, age, gender and educational level of each child.

Name of child residing with you	Age (years)	Gender		Educational level		
		M	F	Pre	Prim	Sec

Figure 12.15 An example of a matrix-type question

are contextually orientated. Question order is specifically relevant when a difficult issue is addressed. An example of a follow-up question is given in Figure 12.16.

Have you lost a child through death?	Yes	No
If yes to the previous question, was the child under the age of five years?	Yes	No

Figure 12.16 An example of a follow-up question

3.4 Checklists

A checklist is a certain type of questionnaire consisting of a series of items to which a respondent mostly has to respond with a tick if the item is applicable to him or her. The items in a checklist are usually not provided with a scale format on which the respondent can choose from different options, but rather with check boxes that indicate whether a characteristic or attribute being measured is present or not. Checklists are developed from theory and are tried and tested in practice before they are used as checklists. In the helping sciences, checklists are mostly used for diagnostic purposes to assess whether a client has a certain condition or not. Checklists are also used for evaluation purposes, the different items in this case representing the criteria for implementing a programme or a policy.

Scriven (2007) describes a checklist as a list of factors, properties, aspects, components, criteria, tasks or dimensions that are considered by a respondent and rated while completing the checklist. He distinguishes among a few different types of checklist:

■ THE LAUNDRY LIST

This type of checklist indicates the presence of a set of categories, and the respondent has to choose from this list whether these aspects are present or not, for example a list of groceries, or items to be used for cooking purposes.

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Although this type of checklist sounds simple to construct, the researcher should carefully consider the order and categories to be included in this list to reduce the risk of error in completing it.

SEQUENTIAL CHECKLIST

This type of list is different from the previous in that a certain order or sequence should be followed in order to get a valid result. An example of such a checklist is an assessment protocol to be followed when assessing a child victim of sexual abuse. The social worker has to mark the list once a procedure has been followed. The following of a sequence is less often used in social research but would imply that the respondent has to follow a certain step-wise procedure and tick off on a list when each step has been completed.

A WEAKLY SEQUENTIAL LIST

This type of list is regarded as largely similar to the previous type but with less emphasis on following the sequence of the list but rather on indicating the sequence in the list for efficiency purposes. For example, in a research project about the procedures followed by forensic social workers, respondents have to indicate the sequence that has been followed in conducting forensic assessments by checking specified procedures on a checklist.

ITERATIVE CHECKLIST

This type may be sequential but the respondent is allowed to go back to previous responses and alter the choice made in a preceding step. The respondent thus goes through the checklist more than once to make changes to its contents. For example, respondents in a project evaluation study have to choose from a series of activities they consider as being indicative of the application of a successful programme.

THE DIAGNOSTIC CHECKLIST

This type of checklist lists a series of criteria indicative of a medical or psychological condition. By completing the checklist a classification can be made that indicates a certain diagnosis or class of problem.

CRITERIA OR MERIT CHECKLIST

This type of checklist is often used for evaluation purposes. It lists a series of criteria, characteristics or behavioural indicators that are either absent or present in the respondent or situation being observed. A checklist usually does not have a built-in rating scale, but checking it merely indicates adherence to given criteria, the merit of which increases the more items are checked. The final score is then used to form an opinion or judgement about that particular situation. Designing checklists reuires the researcher to ensure that the dimensions of observation are as comprehensive and non-overlapping as possible.

An example of a checklist for assessing early childhood development is given in Figure 12.17.

The forced-choice checklist (Figure 12.18), often erroneously called the forced-choice scale, "forces" respondents to make a choice between two aspects that they would normally not weigh against each other. These checklists are specifically

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MOVEMENT	DATE OBSERVED
✓ Raises head and chest when lying on stomach (3 mos)	___________
✓ Supports upper body with arms when lying on stomach (3 mos)	___________
✓ Stretches legs out and kicks when lying on stomach or back (2–3mos)	___________
✓ Opens and shuts hands (2–3 mos)	___________
✓ Pushes down on legs when feet are placed on a firm surface (3 mos)	___________
✓ Brings hands to mouth	___________
✓ Takes swipes at dangling objects with hands	___________
✓ Grasps and shakes hand toys	___________
VISUAL	
✓ Watches face intently (2–3 mos)	___________
✓ Follows moving objects (2 mos)	___________
✓ Recognises familiar objects and people at a distance (3 mos)	___________
✓ Starts using hands and eyes in coordination (3 mos)	___________
HEARING AND SPEECH	
✓ Smiles at the sound of your voice (2–3 mos)	___________
✓ Begins to babble	___________
✓ Begins to imitate some sounds	___________
✓ Turns head toward direction of sound	___________
SOCIAL/EMOTIONAL	
✓ Begins to develop a social smile (1–3 mos)	___________
✓ Enjoys playing with other people and may cry when playing stops (2–3 mos)	___________
✓ Becomes more communicative and expressive with face and body (2–3 mos)	___________
✓ Imitates some movements and facial expressions	___________

Figure 12.17 An example of a checklist

Source: Shelov & Hannemann (2009). Used with permission of the American Academy of Pediatrics, *Caring for your baby and young child: birth to age 5*, 5th edition, 2009.

aimed at cancelling out the "halo" effect, where a respondent develops an impression of a person or situation based on one single characteristic or event and then extends this to all characteristics of that person.

Indicate which of the following characteristics describe you best:

1. Honest or intelligent ___
2. Shy or self-assertive ___
3. Firm of principle or honest ___

Figure 12.18 An example of a forced-choice checklist

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SUMMARY

This chapter introduces the concept of measurement, which is the basis of quantitative data-collection instruments. The validity and reliability of measuring instruments are discussed and the levels of measurement (nominal, ordinal, interval and ratio) described.

Various quantitative data-collection instruments are addressed, such as structured observation schedules and structured interview schedules, as well as the different types of questionnaire and how to construct them. Types of questions that can be used in questionnaires are amply illustrated with examples, and a comprehensive discussion of checklists is given.

The next chapter will focus on a detailed description of indexes and scales as further types of quantitative data-collection method.

Self-evaluation and group discussion

- Describe the four levels of measurement. Which level is applicable to your research? Explain why.
- You have decided to use a questionnaire to collect your data. Explain to your tutor and study group
  - which type of questionnaire you will use and give reasons why you will use the specific type
  - the basic principles that you will take into consideration when compiling the questionnaire.

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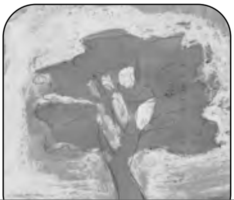

13

CSL DELPORT & WJH ROESTENBURG

Quantitative data-collection methods: indexes and scales

Learning objectives

Studying this chapter should enable the reader to

- develop an understanding about the use of scales and indexes for research purposes
- learn how to distinguish between the above two types of measurement tool
- appreciate the role and place of indexes and scales in the measurement process and in research
- understand the process of scale development and its role in research and practice.

1. INTRODUCTION

Thus far, the quantitative researcher has been introduced to different classes of measurement tool, ranging between questionnaires, checklists, structured interview schedules and different structured observation schedules. All these tools can be classified as measurement tools since they contain a numerical format that represents a quantification of the dimension of measurement. This chapter introduces the reader to more rigorous measurement tools, namely indexes and scales, that can be used with greater confidence in research because of their recognised properties. Indexes and scales can be considered more precise instruments in that they are able to provide more reliable and valid results than the self-designed questionnaire can do. The advantages of using these measurement tools will become clear to the reader in this chapter. This chapter shows how measurement scales are to be designed and outlines the different steps that have to be followed in the standardisation of a measurement tool. Although the process of scale standardisation, or validation as it is known in research, usually is outside the scope of the average grass-

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roots researcher's interest or research focus, it is nevertheless useful to have knowledge of the scale development process and to understand its place in research.

To appreciate the complexities of scale development, the reader has to constantly ask the question: How can knowledge of the scale development principles as presented in this chapter promote the quality of my research? What properties of standardised scales should I take cognisance of?

2. INDEXES AND SCALES

The terms *indexes* and *scales* are often used interchangeably in the social research literature. Although the two types of measure do have some characteristics in common, they also differ in some respects. Both produce ordinal and interval measures of a variable and both are composite measures of variables; that is measurements based on more than one data item (Babbie 2001: 150). The most important difference between indexes and scales is embedded in the construction of the measures. We construct an index simply by accumulating scores assigned to individual attributes, while a scale is constructed by assigning scores to patterns of responses, recognising that some items reflect a relatively weak degree of the variable, while others reflect something stronger. This is why scales are generally regarded as superior to indexes, because scales take into consideration the intensity with which different items reflect the variable being measured and convey more information than index scores (Babbie 2001: 150; Grinnell & Unrau 2008: 114).

In a nutshell, Neuman (2006: 203, 207) describes a scale as a measure in which a researcher captures the intensity, direction, level or potency of a variable. It arranges responses or observations on a continuum. A scale can use a single or multiple indicators. Most are at the ordinal level of measurement. An index is a measure in which a researcher adds or combines several distinct indicators of a construct (items) into a single score. This composite score is often a simple sum of the multiple indicators. In other words, various components or subparts of a construct are each measured, then combined into one measure. Indexes are often measured at the interval and ratio level.

Indexes and scales differ from questionnaires in that scales have been rigorously standardised, whereas questionnaires are not subjected to testing until they are used to collect data. Another difference is that scales may be used for research purposes but also have clinical application value in human service practices. Scales are used to provide numerical feedback to clients by calculating scale scores by means of a formula for quantifying scale data. Interpretations can be made by means of a scale that has clinical significance. It should be obvious that scales are at an entirely different stage of development in that they have been refined specifically for clinical use, whereas indexes are more general in their application value as research instruments. Questionnaires, on the other hand, are broad, early stage devices for collecting data on a topic. Questionnaires also do not have clinical properties or application value.

For the sake of simplicity, we shall obey the convention of calling all indexes and scales "scales" without, however, forgetting the difference. In broad terms, we can distinguish between nominal, ordinal and interval-ratio scales. The different types of scale will be briefly discussed in the following section.

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SECTION C

3. TYPES OF SCALE

3.1 Nominal scaling

Scaling at the nominal level is basically a matter of creating mutually exclusive and exhaustive groups that are as homogeneous as possible. Since researchers are generally interested in at least ordinal-level or preferably interval-level measurement, relatively little attention has been paid to the development of sophisticated methods for nominal scaling. Nominal scaling basically records the presence or absence of a characteristic.

The construction of a nominal scale consisting of only one variable or dimension is really nothing more than the coding of a closed-ended (forced-choice) question. For example, if we ask the respondents to list their gender (male or female), we are constructing a nominal scale of gender. However, nominal scaling can be much more difficult if we wish to construct a multidimensional set of categories (e.g. code simultaneously on age, gender and race instead of merely on gender).

3.2 Ordinal scaling

The basic principle of ordinal scaling is the same as that of a nominal type of question in a questionnaire, but the item is presented in an ordinal or rank order according to some criterion such as importance, urgency or seriousness. Types of ordinal scale are briefly described below.

- *Summated rating.* This is probably the simplest form of ordinal scale (see Figure 13.1).

Rate your child's level of obedience on a scale of 1 to 10 (circle one).

1 2 3 4 5 6 7 8 9 10

Figure 13.1 An example of a summated rating

- *Graphic rating.* Another way in which this kind of rating can be done is by means of pictures (see Figure 13.2).

Do you like school?

Figure 13.2 An example of a graphic rating

- *Numerical scales.* These do not differ much from other scales, except that positives and negatives are accommodated. An example is given in Figure 13.3.
- *Itemised rating scales.* These offer a series of statements designed to rank different positions on the variable being measured. For example, on the itemised

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Dogs ending up at an animal protection society should be used for research as they are going to be killed in any case.

Definitely agree	2
Agree	1
Unsure	0
Do not agree	–1
Definitely do not agree	–2

Figure 13.3 An example of a numerical scale

rating scale in Figure 13.4, respondents are asked to prioritise questions related to their image of themselves as a friend.

If someone asked you to describe yourself as a friend, and you could tell him or her about yourself as a friend, which of the following answers would you be most likely to give? Think of your best friend when marking these statements. Prioritise by putting a 1 in the space next to the statement you regard as the most important and a 5 in the space next to the statement you regard as the least important.

____ I do not contact my friend often, but I am always willing to help when he or she is in trouble.

____ I like giving my opinion on my friend's appearance.

____ I like to give advice on my friend's choice of opposite-sex friends.

____ I never share my own problems with my friend.

____ I am an excellent friend at all times.

Figure 13.4 An example of an itemised rating scale

- *Comparative rating scales.* In comparative rating scales, respondents are asked to compare the individual (or object, or any kind of item) being rated with others. For example, if a panel of experts is asked to rate learners who apply for a Master's programme at the university, they may be asked to compare a learner with other applicants and then to place the rated learner in the top 10 or 20 per cent of learners.

  Figure 13.5 is an example of a rank-order scale on which the goals of a management committee must be ranked according to success rate. Here again it is quite obvious that the scale is essentially ordinal in nature, as it is impossible to determine exactly equal intervals between these goals.

  The assumption underlying comparative rating scales is that the rater has some knowledge of the items to be compared. If a small, select list such as the one above is being ranked, the scale is likely to have little usefulness in other settings or with other companies.

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SECTION
C

Below are the medium-term goals the management committee set out to achieve during the past financial year. Please rank-order these goals from "most successfully achieved" to "least successfully achieved".

____ Communicate company goals to all employees
____ Set priorities for marketing
____ Address identified operational problems
____ Enhance positive corporate culture
____ Promote teamwork

Figure 13.5 An example of a comparative rating scale

- *Self-anchored rating scales.* These scales are similar to others in that respondents are asked to rate themselves on a continuum, usually a seven- or nine-point scale from low to high. However, the specific referents for each point on the continuum are defined by the respondent. This type of scale is often used to measure such attributes as intensity of feeling or pain. For example, clients who have difficulty in being honest in their marital relationship could answer the question in Figure 13.6, which is intended to measure their own perceptions of their honesty. The advantage is that they do not have to attempt to compare themselves with any other couple.

The extent to which you feel you can be honest with your wife/husband:

1	2	3	4	5	6	7	8	9	10
Can never be honest				Can sometimes be honest					Can always be completely honest

Figure 13.6 An example of a self-anchored rating scale

3.3 Interval-ratio scaling

THURSTONE SCALE

One technique designed to construct an interval scale is Thurstone's method of equal-appearing intervals. According to Neuman (2006: 210), the Thurstone scale is a scale in which the researcher gives a group of judges many items and asks them to sort the items into categories along a continuum, and then looks at the sorting results to select items on which the judges are in agreement.

The Thurstone technique is similar to the common practice, quoted previously, of asking someone to rank a child's level of obedience, ranging from 1 to 10. However, the Thurstone technique uses a scale of 11, with the middle category being neutral.

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Generally, the categories are labelled A through K rather than 1 through 11, so that the middle category is F. Also, instead of ranking persons on the scale, the judges whose rankings create the scale rank statements. The 11 categories are arranged from A on the left to K on the right, with A representing the most unfavourable attitude, F neutral and K the most favourable. The judges are given a set of items supposedly all measuring the attribute to be scaled. Then each judge places each item in the 11 categories to represent his or her judgement of how favourably or unfavourably it represents the attribute to be scaled.

The scaling procedure can be summarised as follows:

1. After the attitude to be scaled is selected (e.g. alienation, authoritarianism, prejudice), a large number of items believed to measure this concept are chosen.
2. A sample of judges is chosen to rank each item according to the 11-point scale of favourableness/unfavourableness. In the original study, Thurstone and Chave (1929) used 300 judges to rank 130 statements, and found that each judge required on average 45 minutes to rank them.
3. There is a possibility that some judges will perform incorrectly, for example rating statements according to their personal opinion rather than on how the statement measures the attitude to be scaled. Rankings by judges felt to have done a poor job are eliminated. Specifically, Thurstone and Chave (1929) eliminated those judges who placed 30 or more statements (out of 130) in one of the 11 categories. In the original study, 41 out of 341 judges were eliminated on this basis. Also, those statements on which the judges cannot reach a consensus on ranking are eliminated.
4. The median value of each statement is taken as its scale value. For example, if half the judges rate item 99 above 7 and half rate it below 7, then 7 is the median value, and thus becomes the scale value for that item.
5. Approximately 22 items (or twice the number of original categories) are chosen to form the final scale. These items are chosen on the basis of their scale scores. It is hoped that the 22 items will be approximately equally spaced along the whole continuum, from unfavourable through neutral to favourable.

According to Neuman (2006: 211), the Thurstone scaling method is seldom used because of the following limitations:

- It measures only agreement or disagreement with statements, not the intensity of agreement or disagreement.
- It assumes that judges and others agree on where statements appear in a rating system.
- It is time consuming and costly.
- It is possible to get the same overall score in several ways because agreement and disagreement with different combinations of statements can produce the same average.

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LIKERT SCALE

The Likert scale is probably the most widely used scale in survey research. Accord-

ing to Neuman (2006: 207), the Likert scale is used in research in which people express attitudes or other responses in terms of ordinal-level categories (e.g. agree, disagree) that are ranked along a continuum. Likert scales usually ask respondents to indicate if they agree or disagree with a statement. Other modifications can also be used, for instance people might be asked whether they approve or disapprove. At least two response categories are necessary; however, it is better to use four to eight categories. More distinctions than that are not meaningful, and respondents will become confused. An example of four response categories is the following:

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

Sometimes the researcher wants to include a neutral category (e.g. "don't know", "undecided", "no opinion") in addition to the directional categories (e.g. "agree", "disagree"). In that case the following example may be used:

1. Strongly agree
2. Agree
3. Neutral or undecided
4. Disagree
5. Strongly disagree

Likert scales are also called *summated-rating scales* because a respondent's score on the scale is computed by summing the number of responses the respondent gives. This is accomplished by asking a series of Likert scale questions and then calculating a total score for each respondent; that is assigning the values 1 to 5 (if five categories are used) to the categories and then adding each respondent's five values based on his or her responses (Maree & Pietersen 2007: 167).

SEMANTIC DIFFERENTIAL SCALE

The semantic differential scale is a scale that indirectly measures the feelings or thoughts of people. This scale will thus be used if a researcher wishes to measure a sensitive concept without biasing the respondent's answers by questioning him or her directly about it, or if a researcher wishes to measure the underlying, perhaps even subconscious, feelings of a respondent about a particular concept.

The scale measures subjective feelings toward something by using adjectives, because people communicate evaluations through adjectives in spoken and written language (Neuman 2006: 214). Since most adjectives have polar opposites (e.g. good/bad, strong/weak, slow/fast, hard/soft), the scale uses these opposites to create a numerical measure of a particular concept. The opposite adjectives are placed at the two extremes on a continuum of a 7- to 11-point scale. The respondents then mark the spot on the continuum between the adjectives that best expresses their feelings.

Figure 13.7 is an example of a semantic differential scale. It presents a few questions which were taken from a scale designed to measure patients' feelings toward the nursing home in which they live.

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Below are 29 pairs of words that can be used to describe nursing homes in general. For each pair of words, we would like you to circle the number that comes closest to your feelings about nursing homes. For example, if you feel that nursing homes are more good than bad, circle a number closer to good. The closer the number you circle is to good, the more good and less bad you feel nursing homes in general to be. Continue with each pair.

Good	1	2	3	4	5	6	7	Bad
Beautiful	1	2	3	4	5	6	7	Ugly
Rigid	1	2	3	4	5	6	7	Flexible
Dirty	1	2	3	4	5	6	7	Clean
Happy	1	2	3	4	5	6	7	Sad

Figure 13.7 An example of a semantic differential scale

Leedy and Ormrod (2005: 27) have summarised the types of scale in the following manner: If you can say that

- one object is different from another, you have a nominal scale
- one object is bigger or better or more of anything than another, you have an ordinal scale
- one object is so many units (degrees, inches) more than another, you have an interval scale
- one object is so many times as big or bright or tall or heavy as another, you have a ratio scale.

4. SCALE DEVELOPMENT

Thus far it has been clearly stated that scales are differentiated from questionnaires by the fact that scales are properly validated instruments that find their way as measures into practice as tools with which to assess clients. Owing to their properties as assessment tools, scales are highly suitable measures for research purposes as it is often the purpose of practice-based research to generalise the results of research and then to recommend changes to client services or interventions. The question arises here: Why would a researcher use a scale rather than a self-designed questionnaire or another type of measure? Utilising a standardised scale ensures that measurement problems are minimised to a greater extent. Since the measurement properties of a standardised scale have already been established, a researcher can use such a scale with greater confidence than is the case with self-developed tools. The amount of measurement error that is inherently present in self-designed measures has been largely addressed in the standardised scale. In some studies, usually of a more clinical nature, the researcher is specifically interested in obtaining accurate measures of a respondent's condition before and after an intervention. In such studies the use of a standardised scale may be advantageous. Secondly, it may save the researcher considerable time if he or she does not

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have to design a questionnaire from scratch and run the risk of encountering high levels of measurement error. An advantage of using a standardised scale for research purposes is the fact that the score that is compiled with most scales adds an additional variable that is worthwhile for statistical analysis.

There are, however, instances where researchers have to design their own scale, usually because there is no existing scale available that effectively measures the particular dimension of their study. In such cases, developing the scale may in itself be the topic of research in that the development process utilises a specific method or approach that leads to a standardised scale that often has practice application value. In conventional quantitative research, a self-designed questionnaire is formulated as a means to an end – to collect data for analysis purposes. In scale-development the "questionnaire" is developed for a specific purpose in that it has to fulfil a need for that specific scale and then to validate and disseminate it as an assessment tool. Even if it is not the researcher's intention to develop the scale into an assessment tool for practice, it is still useful to take cognisance of the methodology involved in developing scales. At the very least, this knowledge may promote an awareness of the intricate process of developing valid and reliable measurement tools. This section outlines the scale development process so that the reader can get a basic background of this process and thereby become familiar with the terminology and method for deriving a standardised instrument.

4.1 Some basic terms

Knowledge of the terms *item* and *dimension* is necessary, as these are the basic elements of any measuring instrument. Hudson (1981: 138) as well as Springer, Abell and Hudson (2002: 414) define an item as "any single indicator that enables a practitioner/researcher to assign a number to a client in a systematic way in order to represent some property of the client with respect to that specific variable". According to Faul and Hudson (1999: 41), an item is the smallest possible device for gathering information and consists of one statement, one question or one stimulus that is used to obtain the information needed. In this context all measurement tools can be classified as single-item or multi-item devices.

A dimension may be viewed as any unitary construct that may be represented by one or more different measurement items (Springer et al. 2002: 411). An instrument that is designed to measure only one dimension (variable) is referred to as a unidimensional measure, regardless of the number of items used to measure that variable. Any instrument that is used to measure two or more variables is referred to as a multidimensional measure, regardless of the number of items used to measure any of the dimensions/variables (Faul & Hudson 1999: 42). The authors also emphasise the fact that multidimensional scales are nothing more than a collection of unidimensional scales, each designed to measure only one dimension. A multidimensional scale is constructed by simply putting together in one measurement package the items that comprise the two or more unidimensional scales.

In light of this fact we will focus only on the development of unidimensional scales, meaning that all the items in such a scale should fit together or measure a single variable.

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4.2 Process of scale development

To develop a scale implies a research process consisting of different phases, procedures and techniques. A scan of the social science literature seems to reveal a lack of a clear description of the whole process of scale development. Some authors describe either certain elements in the process only (e.g. selecting items, weighting items, examining their empirical relations, scoring and validating the scale) or describe certain types of scaling (Thurstone 1970; Likert 1970; Guttman 1970) as scaling procedures to illustrate techniques for developing scales (Babbie 2004: 167–174; Neuman 2003: 197–206; Babbie & Mouton 2001: 139–158). It is stressed that the scale development process in essence follows the procedures for designing quantitative studies as outlined earlier in this chapter, but differs in that it is more systematic and rigorous with definite phases and steps.

Faul and Hudson (1999) as well as Springer et al. (2002) describe the process of scale development in more detail. Based on these authors' work, the process of scale development, consisting of three phases with different steps, will briefly be described.

4.2.1 *Predevelopment phase*

The main focus areas in this phase are problem identification and theory formulation.

■ PROBLEM IDENTIFICATION

For the development of an instrument, the researcher must have clarity on why it is necessary to develop a new scale and what the problems with current scales are that justify it. It is possible that there are no scales available to measure a specific area of interest or that the existing scales are not valid, reliable, short, easy to administer and score, easy to understand and interpret, and free from response decay when used repeatedly over many occasions (Springer et al. 2002).

It is also important to determine what the aims of the instrument will be. The kind of scale, what it will measure and what kinds of validation test will be performed on the new scale need to be established. Faul (1995) identifies certain questions that need to be answered:

- What is going to be measured – physical characteristics, biological characteristics, social characteristics, knowledge, ability, achievement, attitudes, beliefs, values, feelings, perceptions, behaviours, problems in personal functioning and problems in social functioning?
- Will the scale measure only one construct, or will more than one unidimensional scale be developed that will measure more than one construct and that will be integrated into a multidimensional scale?
- What kinds of reliability and validity test will be performed on the new scale to validate it for use in practice?
- What will the minimum psychometric standards of reliability and validity be that will satisfy the researcher?

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SECTION C

THEORY FORMULATION

Faul (1995) stresses the importance of developing a scale within a specific theoretical framework, since this forces researchers to think about their data ahead of time and allows them to incorporate the reasons why they have selected certain items for the scale. The importance of a theoretical framework or a thorough literature study at the beginning of scale development was identified in 1952 by Goode and Hatt:

- The first step in scaling procedure, regardless of the technique employed, is a thorough knowledge of the subject. Students must systematically exploit their own observations and those of others through a careful study of the literature and through interviews with "experts" before they can begin scale construction. To underline the importance of this step it should be pointed out that every scale is composed of items which are only a sample of the possible universe of items. Without the fullest possible knowledge of that universe, researchers can have no confidence in the representativeness of the items which they select for their tentative list.
- The next step in the context of theory formulation is to identify the operational assessment area(s) that will be measured by the scale. For example, when a scale is developed that measures decision making, it must be clearly specified what assessment areas will be used to measure this. The formulation of the theoretical framework will guide the researcher in the identification of the areas.

Once this has been done, specific definitions can be worked on for the constructs that will be measured. A construct is also a concept, but it is an abstract concept that is deliberately created to represent a collection of concrete forms of behaviour. The concrete behaviours thus qualify as indicators of the construct (Welman, Kruger & Mitchell 2005: 21). The process of defining a construct is called *conceptualisation*, which means the process in which we specify precisely what we mean when we use particular terms (Rubin & Babbie 2001: 148). Neuman (2006: 182) describes conceptualisation as the process of taking a construct or concept and refining it by giving it a conceptual or theoretical definition.

After the researcher has formulated a conceptual definition, he or she must operationalise the construct; that is, define certain central constructs, generally the independent variables contained in a hypothesis, in terms of the procedures to be performed in order to *measure* the constructs. According to De Vos (1998), this process boils down to

- taking a working definition of a concept or construct
- identifying its central characteristics or dimensions
- finding indicators or items of those characteristics/dimensions which can be presented as stimuli for respondents to react to
- assigning numbers to the presence/absence, frequency, magnitude, intensity or duration of the (prospective) subjects' (expected) reactions to the stimuli
- eventually computing these figures, which will offer ratings by which the construct can then be considered as measured.

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The process of operationalisation therefore involves compiling a list of real characteristics denoted by the concept for the purpose of measurement. By means of the construction of a measuring instrument (index or scale), the items or questions are regarded as indicators of the list of denoted characteristics.

After the construct/s have been conceptualised and operationalised, the researcher moves to the developmental phase, where the actual scale development will take place.

4.2.2 Developmental phase

According to Faul (1995), the designing of a scale comprises five specific tasks, namely to design the items, determine scale length, scale the items, develop a scoring formula and, finally, to write instructions for respondents. These tasks are briefly discussed below.

DESIGN ITEMS

The task of designing items consists of writing the items that will make up the completed scale. After examining different methods in item design, Faul (1995) concludes that the small item pool (SIP) model is the best alternative. The aim of this method is to develop a unidimensional scale that must contain in its initial item pool no more than 20 per cent of the desired number of items for the final version of the scale. Each item must be carefully tested for content validity against the definition of the construct. If an item does not conform to the definition of the construct, it is left out of the questionnaire before any data are collected (Faul & Hudson 1999: 56).

Faul (1995) recommends that the two-step method or the list method be used with the SIP model in the creation of the initial item pool. The two-step method has the following steps:

Step 1

1. Define the construct to be measured in clear, unambiguous terms.
2. Ask one question that will measure the defined construct.
3. Decide on the exact number of items the scale developer wants to extract from this definition and question, allowing for at least duplication of all items, formulated in a different way the second time.

Step 2

1. Write down one attribute of the defined construct.
2. Formulate an item based on that attribute.
3. Repeat these two steps until the required number of items has been generated, bearing in mind that items must be duplicated, but in different words.

After the items have been formulated, the researcher must carefully analyse each item and compare it with the defined construct to determine whether it represents the construct. In this way items are revised, discarded or accepted, thus ensuring good content validity.

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If the scale is intended to be completed by different cultural groups, an additional procedure needs to be built into the design process to ensure that it has sufficient cultural equivalence. A procedure has been developed by Van Breda (2005) to ensure that multicultural scale items are not only translated correctly into a different language, but that the meanings of items as well as customs of different cultures are accommodated in different items. A committee process may be used to ensure that translations and back translations are done as efficiently as possible, or multilingual items are designed from the start.

Another aspect that should be considered in designing items is the intended reading level of the proposed scale. *Reading level* refers to the minimum literacy level at which items are pitched. Sophisticated methods are proposed by Van Breda (2005) to ensure that the correct number of syllables and words are included in items. As a general guideline it is proposed that items should be kept as short as possible from 7–11 words. The scale developer should ensure that items are easy to read.

DETERMINE SCALE LENGTH

One of the most frequent questions that arises during scale development is how long a scale should be. Faul and Hudson (1999: 62) mention that various authors argue that the reliability of a scale increases as its length increases in that scales with many items are usually more reliable than those with only a few items. The law of diminishing returns is, however, applicable here: the gain in reliability is greater when one moves from one to ten items than when one moves from 11 to 20 items, and so on.

Faul (1995) and Hudson (1982) contend that since ecometric assessment tools need to be administered frequently during the course of a period of counselling to test effectiveness, unidimensional scales should not exceed 40 items. Lengthy scales have obvious disadvantages.

SCALE THE ITEMS

Scaling the items is the process of assigning numbers or symbols to the various levels of the particular concept that one wishes to measure. Most of the time one will assign numbers, but occasionally different values of a concept may be designated by symbols such as group A or group B, particularly at the nominal level. In general, however, numbers are assigned. The concept to be scaled will thus be assigned a range of possible values that it can assume on a continuum. In addition, each person to whom the finished scale is administered will have a value or scale score on that particular scale.

Various options exist for assigning values to scale items. Faul and Hudson (1999: 64–70) discuss the following three approaches:

- *Binary item scaling*. This scaling involves two responses: 0 means that the attribute is not present and 1 means that the attribute is present. Although the simplicity of this method is a distinct advantage, the researcher often needs more detailed information than simply whether an attribute exists or not.
- *Actual frequencies scaling*. This method is particularly useful for the construction of direct observation or self-observation assessment tools, and asks the

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respondents to count the frequency of a behaviour, feeling, etc. Although very precise information is gathered, the danger exists that the frequency of one or more events may be the same for more than one person, but the same frequencies may have very different psychological meanings for each.

- *Category partition or Likert scaling*. This scaling consists of breaking up a continuum into a collection of equal intervals or categories. The researcher decides on the number of response categories to be used for each item. The minimum response categories are two, while the maximum is undetermined. However, Faul (1995) recommends five, seven or nine as the ideal number of response categories.

DEVELOP A SCORING FORMULA

Hudson (1982) in Faul and Hudson (1999: 71) suggests a universal scoring formula that can be used in the scoring of multi-item measurement tools.

This formula ensures that the final score will always range from 0 to 100, and provision is made for respondents who do not complete all the questions. Up to 20 per cent of the questions need not even be completed by the respondent in order to compute such a score.

See Nurius and Hudson (1993: 419) for detailed instructions on the scoring of a multi-item assessment scale.

WRITE INSTRUCTIONS FOR RESPONDENTS

The last task in the developmental phase of scale construction is the writing of clear instructions and introductory comments for the completion of the measuring instrument. This avoids confusion and misinterpretation on the part of the respondent. Faul (1995) recommends the following guidelines with regard to instructions for the respondent:

- Keep it simple.
- Explain what is measured.
- Show a response key.
- Explain where to put responses.

After the instrument has been designed, a study must be made to investigate the reliability and validity of the scale.

4.2.3 Validation phase

At the beginning of Chapter 12 we discussed the most important aspects of reliability and validity. The content of that discussion is also appropriate to this phase of scale development and we will not therefore repeat it here. We wish, however, to mention that in order to investigate the reliability of a measuring instrument the researcher can implement three kinds of reliability measure, namely test-retest reliability, parallel form reliability, and internal consistency reliability (Faul & Hudson 1999: 91–97; Rubin & Babbie 2001: 192–193).

To investigate the validity of a measurement tool the researcher must focus on face validity, content validity, construct validity and criterion validity. The different

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kinds of validity can be judged by means of different methodological procedures (Faul & Hudson 1999: 106–130). It is, however, important to remember that the different kinds of validity mutually support one another.

4.2.4 Utilisation phase

The last phase in the process of scale development is to formulate a technical manual where the newly developed scale is described for further utilisation. Faul and Hudson (1999) recommend that the following information should be described in such a manual:

- The theoretical framework that was used to develop the scale
- A formal definition of the construct that was measured
- Information with regard to the administration of the scale
- Information with regard to the scoring of the scale
- Information with regard to the interpretation of the scale
- Information with regard to the reliability of the scale
- Information with regard to the validity of the scale

Utilisation implies that the validated scale now possesses value as an assessment tool due to the fact that its psychometric properties have been established. Researchers often utilise standardised scales as research data-collection tools. In such cases it is important that basic validation statistics are quoted as evidence in the research project. The practice of using existing standardised scales as research tools is encouraged as it lends greater validity to the study.

SUMMARY

This chapter introduces the reader to the properties of more rigorous measurement tools for collecting quantitative data, namely indexes and scales. The process of scale development is specifically introduced to demonstrate to the reader how validation of data-collection tools can assist with promoting validity and reliability in the research process.

Although scale development in itself is a complex process that not many researchers would have an interest in or even engage in doing, it is likely that some of the design steps in the initial validation of an instrument may be of use to researchers. Researchers are recommended to use existing scales in their studies as this might save considerable time and effort while scales may produce more valid and reliable data. Researchers are further advised to at least have their self-developed measurement tools partially assessed for reliability and validity after they have collected their data, if the sample size permits this. Sample sizes of 100 or more as a rule of thumb may be sufficient for establishing a reliability coefficient and conducting a factor analysis. Such analysis would indicate to the researcher whether the questionnaire measured what it was supposed to measure and the extent to which the reliability of its results may be trusted. If standardised scales are used in a research project it is advisable to reference the scale appropriately and to explain its measurement properties as indicated in this chapter. Doing this will add credibility to the study.

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Self-evaluation and group discussion

- Study the scale development process and indicate what you can take with you for your own study.
- In what ways can the use of a standardised scale enhance the quality of a research study?
- Which aspects do you have to report on when using an existing standardised scale for research purposes?
- What will be the implications if the scale you intend using for your research project is not suitable for use with a variety of cultural groups?

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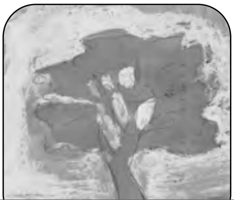

14

H STRYDOM

Sampling in the quantitative paradigm

Learning objectives

Studying this chapter should enable the reader to

- discover the meaning of sampling and a few other basic concepts
- consider the reasons for the use of sampling
- gain a perspective on the size and representativeness of samples
- be acquainted with the drawing of a random sample
- view the two main groups of samples from which the prospective researcher can make a selection.

1. INTRODUCTION

This chapter deals with Step 9: selecting a sampling plan as part of the planning phase of the research process. The notion behind sampling theory is that a small set of observations can give an idea of what can be expected in the total population of the intended study (Royse 2004: 189–190). Both quantitative and qualitative researchers employ sampling techniques and there are many similarities with regard to sampling between the two paradigms. Basically the quantitative paradigm focuses on randomisation, generalisability, representativeness and both probability and non-probability sampling techniques, while the qualitative paradigm focuses on non-probability sampling techniques (Alston & Bowles 2003: 66). This chapter will attempt to highlight sampling and sampling methods specifically for the quantitative paradigm. Sampling in the qualitative context will be discussed in Chapter 23.

2. SELECT A SAMPLING PLAN

As the concept of sampling is one of the most important in the total research endeavour, it is imperative that students understand it clearly before selecting a

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sampling plan and conducting the main research. Kerlinger and Lee (2000: 163–178) offer the following comments that may be helpful in our initial attempts at understanding the concept of sampling. Imagine, they write, the many situations in which we want to know something about people, about events, about things. In order to learn something about people, for instance, we take several people whom we know – or do not know – and study them. After our study, we come to certain conclusions, often about people in general. Some such method lies behind much folk wisdom. Common-sense observations about people, their motives and their behaviours derive, for the most part, from observations and experiences with relatively few people. We make such statements as: "People nowadays have no sense of moral values" or "Politicians are corrupt".

The basis for making such statements is simple. People come to certain conclusions about other people and about their environment mostly through their own somewhat limited experiences. In order to come to such conclusions, they must sample their experiences of other people. In fact, they take relatively small samples of all possible experiences. Indeed, most of the world's knowledge is based on samples, most often inadequate ones. A process of constant comparison is necessary to understand all instances of the cases under investigation.

Sampling means taking a portion or a smaller number of units of a population as representative or having particular characteristics of that total population (Denscombe 2008: 141; DePoy & Gilson 2008: 234–235; Kerlinger & Lee 2000: 164; Thomas & Smith 2003: 225). This definition does not say that the sample drawn is in fact representative. Rather, the sample taken is *considered* to be representative. It is important to understand the concept of representativeness and its relationship to generalisability (Graziano & Raulin 2000: 133). We can only generalise the findings of a study when we can assume that what we observed in the sample of subjects would also be observed in any other group of subjects from the population.

2.1 Universe and population

The term *sample* always implies the simultaneous existence of a population or universe of which the sample is a smaller section, or a set of individuals selected from a population (Gravetter & Forzano 2003: 465). Arkava and Lane (1983: 27) draw a distinction between the terms *universe* and *population*. Universe, they write, refers to all potential subjects who possess the attributes in which the researcher is interested. Population, on the other hand, is a term that sets boundaries on the study units. It refers to individuals in the universe who possess specific characteristics. For instance, all social workers registered by the South African Council for Social Service Professions constitute a universe. When undertaking a study of child abuse, the population might include all social workers working in child-protection services. This distinction is a helpful one and is accepted by the authors of this book. McBurney (2001: 248) refers to the population as the sampling frame. A population is the totality of persons, events, organisation units, case records or other sampling units with which the research problem is concerned.

2.2 Definition of a sample

A sample comprises elements or a subset of the population considered for actual

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inclusion in the study, or it can be viewed as a subset of measurements drawn from a population in which we are interested (Unrau, Gabor & Grinnell 2007: 279). Sampling is studied in an effort to understand the population from which it was drawn. Alternatively, a sample is a small portion of the total set of objects, events or persons from which a representative selection is made (Barker 2003: 380).

2.3 Reasons for the use of samples

Sarantakos (2000: 139) states that the major reason for sampling is feasibility. A complete coverage of the total population is seldom possible, and all the members of a population of interest, for example drug abusers, parents of preschool children or child abusers, cannot possibly be reached (Yates 2004: 25). Even if it were theoretically possible to identify, contact and study the entire relevant population, time and cost considerations usually make this a prohibitive undertaking. The use of samples may therefore result, as was mentioned above, in more accurate information than might have been obtained if one had studied the entire population. This is so because, with a sample, time, money and effort can be concentrated to produce better-quality research, better instruments, more in-depth information, and better-trained interviewers or observers.

The observation or study of a phenomenon in its entirety would be tedious and time consuming, and would produce a massive amount of data, which by implication would be difficult to process, analyse and interpret. In addition, the nature of the practice or research problem in which one is interested does not always permit access to the entire set of entities that comprise the population. It may be that the population itself is too large to study, or one may not have sufficient time or resources to do the job. In such a case it would be possible to study only a portion of the population or a sample.

2.4 The size of a sample

The issue of the minimum size of a sample is repeatedly addressed in the literature. It is generally stated that the larger the population, the smaller the percentage of that population the sample needs to be, and vice versa (Neuman 2003: 232). If the population itself is relatively small, the sample should comprise a reasonably large percentage of it. Larger samples enable researchers to draw more representative and more accurate conclusions, and to make more accurate predictions than in smaller samples, although this is more costly (Bless, Higson-Smith & Kagee 2006: 107; Mitchell & Jolley 2001: 496–497; Salkind 2000: 96).

However, by increasing sample size, smaller and smaller effects will be found to be statistically significant until, at very large sample sizes, almost any effect is significant. The researcher must always be aware that sample size can impact on the statistical test by making it either insensitive (at small sample sizes) or overly sensitive (at very large sample sizes). The size of the sample will also be influenced by the relative homogeneity or heterogeneity of the population, and the desired degree of reliability for the purposes of the investigation (Huysamen 1993: 50–51).

The greater the probability of sample error, the larger the sample should be (Grinnell & Unrau 2005: 168; Welman, Kruger & Mitchell 2005: 70, 74). Since a

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certain degree of respondent or subject mortality occurs in any research project, it is wise to draw a larger sample than may eventually be needed. Any researcher ought to obviously obtain the largest possible sample. Neuman (2003: 232) cites the following factors which influence the size of the sample: the heterogeneity of the population, the desired degree of accuracy, the type of sample, the available resources, and the number of variables in which the data are grouped.

Grinnell and Williams (1990: 127) state that in most cases a 10 per cent sample should be sufficient for controlling for sampling errors. However, differences of opinion exist with regard to the minimum number of respondents that should be involved in an investigation. Grinnell and Williams contend that 30 is sufficient to perform basic statistical procedures, while others feel that a minimum of 100 is enough. It is not always possible to involve a minimum number of respondents in an investigation, because the total population is often quite small, and it is preferable for the total population to be involved in such cases.

The realisability of the measuring instrument becomes an issue when working with small populations. Sometimes researchers want to draw a sample from even a small population, or they have to deal with exceptional phenomena, for instance when a certain situation is found on a very small scale in an institution. Researchers must then resign themselves to tracing only 20 to 30 cases in a particular year.

When working with small populations from which a sample is still to be drawn, it is necessary that the instrument be tested repeatedly on similar populations in order to ensure reliability. After every testing the instrument ought to be edited and applied again in order to achieve the desired level of reliability. Once judged as reliable, the investigator conducts the research project administering the instrument with confidence, assuming that the instrument has appropriate validity. Precisely because of the rarity of a phenomenon, the procedure described above is not always possible.

Stoker (1985) offers a table (see Table 14.1) as an indication of what the size of a sample ought to be:

Table 14.1 Guidelines for sampling

Population	Percentage suggested	Number of respondents
20	100%	20
30	80%	24
50	64%	32
100	45%	45
200	32%	64
500	20%	100
1 000	14%	140
10 000	4,5%	450
100 000	2%	2 000
200 000	1%	2 000

Source: Stoker (1985)

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SECTION
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2.5 Representativeness of samples

A representative sample is important when we want to generalise from the sample to the larger population, meaning that the sample should have approximately the same distribution of characteristics as the population from which it is selected (Marlow 2005: 136). If gender and socio-economic class are variables (characteristics) relevant to the research, a representative sample will have approximately the same proportions of men and women and middle-class and working-class individuals as the population.

The question then arises: How can we ensure that a sample is as representative as possible? The answer offered by all methodologists is that random sampling is the only technique available that will ensure an optimal chance of drawing a sample that is representative of the population from which it was drawn. This then leads us to consider the two kinds of sampling available to researchers: probability sampling, which is based on randomisation; and non-probability sampling, which does not implement randomisation. However, let us look a little more closely at the concept of randomisation before considering in detail the types of sampling.

2.6 Drawing a random sample

Monette, Sullivan and DeJong (2005: 134) succinctly state that random sampling, also known as probability sampling, is that method of drawing a portion, or sample, of a population so that each member of the population has an equal chance of being selected. They point out, however, that this definition, although it is easily understood, is limited. A better definition would be: Random sampling is that method of drawing a sample of a population so that all possible samples of fixed size n have the same probability of being selected. As this statement implies an understanding of probability theory, a discussion of which we are avoiding in an introductory text such as this one, we shall let the matter rest at this point.

It is, nevertheless, important that all novice researchers master the very simple practical technique of drawing a random sample using a table of random numbers – of which most methodological textbooks usually have lists as appendices. By following the steps below carefully, the researcher should have no problems in executing such random sampling.

2.6.1 Steps in drawing a random sample list

■ **STEP 1**

Identify and list the research population. When drawing a random sample, the researcher must have a complete list of the research population from which he or she wants to draw the sample. This can be a list drawn from a voters' list, a telephone directory, the files of a welfare organisation, all the children in a children's home or school, or any relevant source whatsoever.

■ **STEP 2**

Assign a number to every person or item in the population. The researcher now has the tedious task of assigning numbers to all the members of the research popula-

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tion. The researcher can start anywhere in the list, but will assign 01 to the first person or item, 02 to the second, 03 and so on, up to 99. If the population is larger than 100, the researcher continues with 100 up to 999, and, if necessary up to 9 999, or whatever the size of the population is. In some instances computer software can perform this tedious task for the researcher.

■ STEP 3

Decide on the size of the sample; that is, what percentage of the population we want to study. As was mentioned above, some methodologists suggest that drawing a 10 per cent sample of a known population has become a convention which serves as a handy rule of thumb. Alternatively, a table such as the one suggested by Stoker (1985) and quoted above can be used. This decision is, however, naturally a crucial one in the whole process.

■ STEP 4

Note that the size of the population determines the number of digits that will be used from the random table. If the population from which the sample is to be drawn is, say, 50, 70 or 80, there are only two digits, and therefore only two digits from a random table will be used to draw the sample. If the population is 100, 300 or 500, then there are three digits in the population size, and therefore three digits from the random table will be used. If the population is 1 000 or any other similar denomination, then there are four digits, and four digits from the table are used, and so on.

■ STEP 5

Select any *column* (with the correct number of digits as indicated in Step 4 above) from any list of random numbers, but stick to the selected column. The researcher is now ready to start drawing the sample. Any list of random numbers is taken as the one to be used, but he or she must then stick to the selected column, and not jump around to any other column. For example: the population size may be 500; the researcher decides on a 10 per cent sample, that is, 50; the population size determines that the researcher should select a column with three digits. The researcher then, for instance, decides to use a page from Bailey's (1994: 528) Appendix A, reproduced in Table 14.2, and selects one column, as indicated below.

■ STEP 6

Go strictly down the column and mark every number as large as or smaller than the population until the desired size of the sample has been reached. In our example we select the first three-digit column of the selected table of numbers. They are 100, 375, 084, 990, 128, etc. The principle is to mark every number as large as or smaller than the population. This means that 100 is marked (smaller than 500), also 375 (smaller than 500), 084 (smaller than 500), but not 990 (larger than 500); 128 is marked (smaller than 500), and so on.

This means that the persons or items in our population with the numbers 100, 375, 84, 128, 310, 118, etc. (which we assigned during Step 2 described above) are all in the sample. We continue in this way until 50 persons or items have been

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marked – and thus our random sample is drawn. Today, many pocket calculators have a built-in function for generating two- and three-digit random numbers, which makes random number tables almost superfluous. Most statistics computer packages can also generate random numbers from many different distributions. Since we now know what random sampling is (and how simply it can be executed), we can continue considering the different kinds of sampling available to the researcher.

3. PROBABILITY SAMPLING

As has been suggested in this chapter, two major groups of sampling procedures exist, and we have also suggested that the first – probability sampling – is based on randomisation, while the second – non-probability sampling – is done without randomisation. As stated earlier in this chapter, the quantitative paradigm relies more on probability sampling techniques and that non-probability techniques can also be used, but in the qualitative paradigm the focus is on non-probability sampling techniques. It all has to do with knowing or not knowing the population on which the intended study is planned (Grinnell & Unrau 2005: 155).

In the most general sense, according to DePoy and Gilson (2008: 234), Druckman (2005: 141–142), Grinnell and Unrau (2008: 143), Kirk (1999: 367) and Unrau et al. (2007: 280), a probability or random sample is one in which each person in the population has the same known probability to be representatively selected which permits the researcher to compute an estimate of the accuracy of the sample even before the study is done. Gravetter and Forzano (2003: 118) add that in probability sampling the odds of selecting a particular individual are known and can be calculated. In addition, the selection of persons from the population is based on some form of random procedure. The best-known kinds of probability sampling are simple random sampling, systematic sampling, stratified random sampling, cluster sampling and panel sampling.

3.1 Simple random sampling

Marlow (2005: 139) says that simple random sampling is the easiest of the sampling methods where each individual case in the population theoretically has an equal chance of being selected for the sample (Jackson 2003: 15). In practice it is necessary to assign a unique number to each participant within the population (Grinnell & Unrau 2005: 210). The following may serve as an example: List the site or street numbers of all respondents. Decide on the sample size required, for instance 50. If all numbers consist of one, two or three digits, for example, and there are no duplicate numbers, any random table of three figures can be used. Starting at any chosen point in the table, taking three digits at a time and reading horizontally or vertically, sets of three digits are chosen and written down. If it was decided that only persons with numbers above 500 would be included in the investigation, and those with numbers under 500 excluded, only numbers greater than 500 will be accepted. No duplicate numbers are accepted. Write down the first 50 numbers complying with these restrictions. Thus, the respondents with these 50 street numbers are chosen for the sample.

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Table 14.2 Table of random digits

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Source: Bailey (1994: 528)

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3.2 Systematic sampling

Here only the first case is selected randomly, preferably from a random table as described earlier in this chapter. All subsequent cases are selected according to a particular interval, for instance every fifth or tenth case on a list of names, depending on the percentage sample needed (Rubin & Babbie 2005: 266–267). Alternatively, the researcher can decide from the beginning that each tenth case on an alphabetical list will be selected, for instance numbers 10, 20, 30, 40, 50, and so on. Effort is saved by this method, but it entails the danger of bias in that the selected interval could accidentally coincide with one or other characteristic of the study group. According to Babbie (2007: 202–205), systematic sampling is considered as having a higher value than simple random sampling, at least as far as convenience is concerned. Bailey (1994: 91) also refers to the simple procedure of systematic sampling, especially if a sampling frame is not available.

3.3 Stratified random sampling

This type of sampling is suitable for heterogeneous populations because the inclusion of small subgroups percentage-wise can be ensured. Stratification consists of the universe being divided into a number of strata which are mutually exclusive, and the members of which are homogeneous with regard to some characteristic such as gender, home language, income levels, level of education or age (Glicken 2003: 180; Mitchell & Jolley 2001: 497; Singleton et al. 1988: 145).

This kind of sample is mainly used to ensure that the different groups or segments of a population acquire sufficient representation in the sample (Creswell 2003: 156–157). The pre-determined desired number of persons is then selected proportionally within each of the different strata (Struwig & Stead 2001: 113). This means drawing each sample according to the number of persons in that stratum, for instance larger samples from larger strata, and smaller samples from smaller strata. Selection within the different strata still occurs randomly. Stratified random sampling uses known information about the population prior to sampling in order to make the sampling process more efficient (Grinnell & Unrau 2005: 160).

3.4 Cluster sampling

Cluster sampling is also called area or multistage sampling (Monette et al. 2005: 137–141). Jackson (2003: 60) says that cluster sampling is often used in cases where the population is too large for random sampling. This type of sample is sometimes used when a sampling frame such as a list of names is not available, but only a map of the relevant geographical area. Cluster sampling is also employed when economic considerations and cluster criteria are significant for the study (Sarantakos 2000: 146).

This method also has the advantage of concentrating the field study in a specific section of the greater geographical area, and thus helps save costs and time. The researcher should attempt to retain areas which are naturally grouped together, such as suburbs or street blocks. Each cluster on its own must represent the whole population, but variation between clusters must be small. Unlike stratified sam-

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pling, which draws cases from each stratum, cluster sampling draws cases only from those clusters selected for the sample.

Cluster sampling is at least a two-stage procedure where a random sample of clusters is firstly drawn and then a random sample of elements within each cluster is selected (Grinnell & Unrau 2005: 162–163). Sampling in this case consists of the creation of a number of externally homogeneous but internally heterogeneous clusters in the relevant population, and subsequent random selection of one or another of these clusters in the sample. Suppose there are nine suburbs in a city which is part of the investigation, and that three of them are homogeneous with regard to the age of the residents. One of each of the three categories can be selected in the sample, in other words three suburbs from nine are thus involved. It is uneconomical to involve a whole country in the case of national surveys, in which cases cluster sampling has great value, although some loss of accuracy in the sample is inevitable.

The more clusters that are included in the study, the more representative of the population the sample naturally is. The more clusters that are drawn, the less is the error that will occur – but the higher the cost factor will be. Conversely, the fewer the clusters, the less representative the sample of the population is. The selected clusters can either be included fully in the sample, or further sampling within the selected clusters can be performed. Selection within the selected cluster must, of course, still occur randomly. In cases such as these where multistage sampling is utilised, the researcher must ensure that he or she performs the sampling procedures with great accuracy. A balance must be maintained between the sizes of the samples at the various stages so that the size of the samples will not initially be too large and later too small, or vice versa.

3.5 Panel sampling

A panel sample means that a fixed panel of persons is selected from the population of persons involved in a particular issue. This panel has, naturally, to be proportionately representative of the relevant population. If a certain group of chain stores, for example, wants to compose a panel from their clients to test a certain product, this method of sampling can be used. If, for example, 80 per cent of the clients of the product are women, four women for each man should be included on the panel.

4. NON-PROBABILITY SAMPLING

In non-probability sampling the odds of selecting a particular individual are not known because the researcher does not know the population size or the members of the population (Gravetter & Forzano 2003: 118; Salkind 2000: 87). Unrau et al. (2007: 280) add that in the non-probability paradigm each unit in a sampling frame does not have an equal chance of being selected for a particular study. In this section, accidental, purposive, quota, dimensional, target, snowball, spatial, theoretical, deviant case, key informant and volunteer sampling are discussed. Some of these are more appropriate for quantitative than qualitative research, and vice versa.

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4.1 Accidental sampling

Authors such as Alston and Bowles (2003: 87–88), Bailey (1994: 94), McBurney (2001: 246), Monette et al. (2005: 145–146), and Rubin and Babbie (2005: 245) call this type of sample a convenient, availability or haphazard sample and add that the respondents are usually those who are nearest and most easily available. Any case which happens to cross the researcher's path and has anything to do with the phenomenon is included in the sample until the desired number is obtained. The so-called man-in-the-street interviews where cases are taken which are at hand at a specific time and place are often conducted by television teams and can be a risky way of assessing public opinion on a specific topic such as morality or political issues. One can say that convenience samples will almost certainly be biased (Grinnell & Unrau 2008: 355), because certain groups will, for instance, be more abundant in certain areas of any city than other groups and will therefore be over-represented in the sampling frame which is chosen by convenience.

4.2 Purposive sampling

This technique is also called judgemental sampling (Rubin & Babbie 2005: 247). This type of sample is based entirely on the judgement of the researcher, in that a sample is composed of elements that contain the most characteristic, representative or typical attributes of the population that serve the purpose of the study best (Grinnell & Unrau 2008: 153, Monette et al. 2005: 148). The researcher may decide, for instance, that matriculation learners' views on drugs are representative of those of modern youth. Another researcher may believe that first-year students' views are more representative of those of modern youth. The judgement of the individual researcher is obviously too prominent a factor in this type of sample.

4.3 Quota sampling

Quota samples are often used by market researchers. Their main purpose is to draw a sample that is as close to a replica of the population as possible, and that represents the population as such (Royse 2004: 198). A cross-section of the population is involved, in that particular categories of persons, according to the distribution of these categories in the relevant population, are sampled. The categories can, for instance, be gender, age or occupation. Babbie (2007: 185) adds that the researcher must be fully aware of the relationship between, for example, gender and age in the relevant population.

The sample sizes or quotas to be taken from each category are usually selected in proportion to the category sizes, and sample elements are then collected at random by the fieldworkers in the various categories until the desired quotas have been obtained. The most important deficiency of this type of sample is that the selection of persons for inclusion in the sample rests totally with the fieldworker, and that subjectivity and bias can consequently play a significant role (Royse 2004: 198). It is also difficult to determine what percentage of each category should be represented in the sample when a defined population does not exist.

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4.4 Dimensional sampling

Dimensional sampling is viewed by Bailey (1994: 95) as a multidimensional form of quota sampling. The idea is to specify all variables in the population that are of interest to the investigation, and then see to it that each dimension is represented by at least one case. The method entails that only a few cases are studied in depth. The problem encountered in many investigations, namely that certain variables may be left out, is largely obviated by this method.

4.5 Target sampling

Target sampling is mainly a strategy for obtaining systematic information when random sampling is impossible and when accidental sampling cannot be strictly implemented as a consequence of the hidden nature of the problem. This can be regarded as a sampling strategy with similarities to both quota and purposive sampling. It involves strategies to ensure that people or groups with specific characteristics within a specific geographical area have an enhanced chance of appearing in the sample (Monette et al. 2005: 149).

In the case of target sampling researchers must first compile a list of names by means of careful questioning in the community until they have a sufficient number of respondents to commence their investigation. Great effort is put into involving a sufficient number of respondents by carefully explaining the purpose and value of the study to them. In target sampling the emphasis is on the investigation of hidden problems in hidden populations. Observation, interviews with informants and studying police records are ways in which the desired number of respondents can be determined. Researchers wishing to use this method will have to follow a flexible approach in their sampling, since it is impossible to use a rigid set of rules.

4.6 Snowball sampling

Snowball sampling is normally used when there is no knowledge of the sampling frame and limited access to appropriate participants for the intended study (Alston & Bowles 2003: 90). Snowballing involves approaching a single case that is involved in the phenomenon to be investigated in order to gain information on other similar persons. This one person refers the researcher to another similar case and preferably more than one other case (Grinnell & Unrau 2008: 153; Royse 2004: 197–198). In this manner the sampling frame is selected consisting of people who could make up the sample until a sufficient number of cases have been included in the study. The researcher should carry on selecting participants until nobody else with those specific characteristics can be found or until data saturation has taken place (Alston & Bowles 2003: 90; Sarantakos 2000: 153).

Because it can easily happen that the chain becomes broken, the researcher should preferably ask each respondent to give five names instead of only one. The snowball technique is excellent in those cases where the researcher is investigating a relatively unknown phenomenon such as the psychosocial circumstances of Polish immigrants in Johannesburg or the degree of life satisfaction of street people in Cape Town.

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SECTION C

4.7 Sequential sampling

Sequential sampling is similar to purposive sampling (section 4.2) with the difference that in purposive sampling the researcher tries to find as many relevant cases as possible until all the resources are exhausted (Neuman 2003: 215). Sequential sampling can also be compared to snowball sampling in the sense that in the case of snowball sampling the topic of research is more hidden and the participants are therefore very hard to get hold of, which is not necessarily the case with sequential sampling. The principle is to gather data until a saturation point is reached. This requires the researcher to continuously evaluate all the collected data in order to know when this occurs (Neuman 2003: 215).

4.8 Spatial sampling

This type of sample is used in cases of highly temporary populations such as a sporting event or the scene of an accident. Researchers should decide beforehand, as far as possible, how this population will be approached in order to get more or less representative views from respondents. Researchers should permeate such a gathering thoroughly and use keen observation in addition to recording what respondents say.

4.9 Key informant sampling

In this case sampling relies on people in the community identified as experts in the particular field of interest (Marlow 2005: 145). The strategy is to interview these identified experts systematically after they have been identified. The issue of non-probability comes into the picture because there cannot be certainty about whether the identified participants are really the total spectrum of possible participants.

SUMMARY

Sampling is described as taking a portion of a population or universe and considering it representative of that population or universe. Generalising the results of a study based on working with such a sample means that it is assumed that any other portion of the same population would yield the same observations. Sampling is done to increase the feasibility, cost effectiveness, accuracy and manageability of the prospective survey.

Factors that influence the eventual size of a sample are the heterogeneity of the population, the desired degree of accuracy, the type of sample, the available resources and the number of variables into which the data are grouped. The chosen measuring instrument should be compatible with the size of the sample and, if possible, should first be tested to determine its degree of accuracy. This chapter focuses on sampling and sampling methods in the quantitative paradigm. Finally, sampling techniques can be classified under probability and non-probability sampling techniques, and a number of both are delineated.

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Self-evaluation and group discussion

- Explain why you will be using sampling in your own research.
- Explain which sampling technique you will use, why you have selected that particular technique, and how you intend applying it in your own study.

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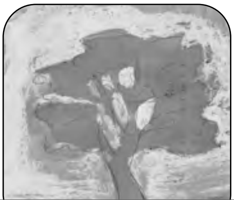

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H STRYDOM

The pilot study in the quantitative paradigm

Learning objectives

Studying this chapter should enable the reader to

- examine the concept *pilot study*
- get acquainted with four aspects of a pilot study: the role of the literature study; the experience of experts; the feasibility of the study; and testing the measuring instrument
- assess the value of a pilot study with regard to a variety of considerations.

1. INTRODUCTION

In order to undertake scientific research on a specific topic, the researcher should have thorough background knowledge on it. The pilot study is one way in which prospective researchers can orientate themselves to the project they have in mind. Mouton (2001: 103) says that one of the most common errors in doing research is that no piloting or pretesting is done.

Prospective researchers are often over-hasty to get to the main investigation, and are therefore inclined to neglect the pilot study. McBurney (2001: 228–229) says that the temptation to skip the pilot phase should be resisted, because a little effort can greatly increase the precision of the study. Researchers should never start the main inquiry unless they are confident the chosen procedures are suitable, valid, reliable, effective and free from problems and errors, or at least that they have taken all possible precautions to avoid any problems that might arise during the study (Sarantakos 2000: 291). The pilot study is indeed a prerequisite for the successful execution and completion of a research project, and attempts to expand our knowledge about the interventions we use and their effects on our clients (Royse 2004: 118). The pilot study forms an integral part of the research process. Its function is the exact formulation of the research problem, and a tentative planning of the modus operandi and range of the investigation.

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2. PHASE 4: IMPLEMENTATION

2.1 Step 10: Conduct a pilot study

2.1.1 The concept "pilot study"

Pretesting a measuring instrument consists of carrying out all aspects of the total data-collection process on a small scale (Grinnell & Unrau 2008: 336; Monette, Sullivan & DeJong 2005: 9). Probability does not normally play a major role in the pilot study, especially not in the qualitative paradigm, because the researcher does not plan to generalise the findings. However, the pilot study must take all heterogeneous factors into consideration.

Barker (2003: 327–328) defines a pilot study as a procedure for testing and validating an instrument by administering it to a small group of participants from the intended test population. The ones who participate in the pilot study should not participate in the main inquiry (Rubin & Babbie 2005: 219; Unrau, Gabor & Grinnell 2007: 179). Mitchell and Jolley (2001: 13–14) add that a pilot study helps the researcher to fine-tune and debug the process for a smooth main inquiry (McBurney 2001: 228–229; Rubin & Babbie 2005: 219). Bless, Higson-Smith and Kagee (2006: 184) provide what is perhaps the most encompassing definition of the pilot study: "A small study conducted prior to a larger piece of research to determine whether the methodology, sampling, instruments and analysis are adequate and appropriate."

However, a number of different opinions on and definitions of the pilot study exist. Some of these address one aspect of the pilot study, while others are more comprehensive. Sarantakos (2000: 292–294), for instance, differentiates between the pretest and the pilot study. The former comprises the testing of one or more aspects of the subject, such as the questionnaire or the programme for the analysis of the data. We feel that the concept *pilot study* is the more correct and the more comprehensive.

Although the researcher may plan his or her investigation very carefully and logically, the practical situation will remain an unknown factor until it is entered. The pilot study can be viewed as the dress rehearsal of the main investigation. It is similar to the researcher's planned investigation, though on a smaller scale. Pilot studies are therefore increasingly becoming standard practice in research.

2.1.2 Aspects of a pilot study

Many literature sources mention pilot studies and then only the pretesting of the measuring instrument in their texts (Unrau et al. 2007: 179). Very few, however, devote a chapter or a part of a chapter to the pilot study. In this section of the chapter, the study of literature, the experience of experts, the feasibility of the study and the testing of the measuring instrument will be addressed. A pilot study should be important in both the quantitative and qualitative paradigm of research, and the differences between the two should be taken into consideration.

■ STUDY OF THE LITERATURE

Prospective researchers can only hope to undertake meaningful research if they are fully up to date with existing knowledge on their prospective subject. Researchers'

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training in the relevant discipline forms the broad background for the planned investigation. However, this alone is not enough. They must trace all available literature that is broadly and specifically relevant to their subject.

The wealth of literature which will confront prospective researchers at this stage of their investigation may, however, frighten rather than encourage them in their research endeavour. They will be consoled if they are told that the literature study during the pilot study does not entail a detailed study of all available research. The purpose is rather to orientate to the question of whether literature on the specific subject in fact exists, what kind of literature this is, if it is still relevant and whether it is freely available. This purpose should remain the broad orientation of the researcher at this point. A detailed study of the literature only becomes relevant during the main investigation.

Owing to the existence of a variety of literature guides, prospective researchers need not rely entirely on their own investigative abilities. Computerised databases, now globally available through the Internet, make the tracing of all relevant sources a routine matter. Librarians assigned to specific disciplines at academic libraries are also of invaluable assistance in this regard. Prospective researchers should not focus only on books as possible sources, but must also realise that journals, dissertations, theses, the Internet and other documents often contain the most recent information on a subject.

Any research project should thus strive for a balance between the different kinds of source available during the literature study. Prospective researchers should start to compile a bibliography during the pilot study in the proper referencing style selected, such as APA or Harvard. This will save them time later in producing full bibliographical particulars. Researchers should attempt to use the latest edition of a particular publication, unless there is a specific reason not to. Do remember that material not easily accessible can always be ordered from the library or as an interlibrary loan from another library.

The literature study is important not only for the clear formulation of the problem, but also for executing the planning and actual implementation of the investigation. Existing research reports are a source of information for prospective researchers on the suitability of certain subjects, procedures and obstacles they may encounter in their own investigation. Researchers should, however, remember that procedures used in other studies may not necessarily be suitable for their own purposes. Nevertheless, the information serves as a broad orientation and as knowledge enrichment before the commencement of the investigation.

By taking note of existing literature researchers will realise what has been done and needs to be done in the future study. This will prevent them from re-inventing the wheel and enable them to advance the topic. Indeed, the main purpose of the literature study during the pilot study phase remains the broad orientation of prospective researchers with regard to their prospective investigation, though it alerts them, at the same time, to certain aspects relating to the main investigation.

THE EXPERIENCE OF EXPERTS

Despite the wealth of literature which may exist in any discipline, this usually represents only a section of the knowledge of people involved daily in the specific field. Experts can be an excellent source of knowledge and should be exploited fully. Since

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the field of the helping professions is so broad, people tend to specialise. Thus an increasing number of persons trained in a specialised area, or who have been active for many years in that specific area, undertake research. It is therefore extremely valuable to prospective researchers to utilise these resources.

However, experts do not necessarily shed more light on a subject; they may instead further complicate the conceptualisation of the problem formulation, and this can lead to confusion in the mind of the researcher. Thus consulting experts is not necessarily always advantageous to prospective researchers. Not only may they confuse them with too many ideas about the prospective project, but they may in fact also attempt to force their own ideas and possible subjects on them. This is why it is imperative for prospective researchers to have their ideas in place and to have progressed some distance with the literature study before they consult the experts.

Investigators should be selective in their choice of experts and in some cases a sample of experts to consult can even be drawn up in order to gain a representative sample of all the possible types of experience that practice offers. Usually, most prospective researchers are already aware of certain experts whom they can contact. If they do not know many experts, they can use the snowball method, using each expert to find the next one.

Information can be gleaned from experts in different ways. If the expert is not easily accessible, the prospective researcher has to be satisfied with correspondence or telephonic contact. Information should be gathered using a structured interview schedule so that the minimum time is lost with general questions and comments. The schedule should preferably be brief, so that the minimum time is taken up with its completion. Researchers should thus limit themselves to specific and clearly formulated questions.

Personal interviews with experts normally have more value than correspondence or telephonic contact. Interviews should always take place against the background of a broad perspective gained from the literature study. The purpose of interviews with experts is to bring unknown perspectives to the fore or to confirm or reject the researcher's own views.

The utilisation of experts can thus help the researcher to delineate the problem more sharply and gain valuable information on the more technical and practical aspects of the prospective research endeavour. Tapping the experience of experts usually offers many more advantages than disadvantages, and therefore this aspect should be encouraged as part of the pilot study. Interviewing experts is also important in qualitative research for the purpose of identifying themes for further investigation or in order to do a valid literature review with a view to verifying findings.

FEASIBILITY OF THE STUDY

It is also necessary to obtain an overview of the actual, practical situation in which the prospective investigation will be executed. As part of the pilot study the researcher should address the goals and objectives, resources, the field itself, the research population, procedures of data collection, the data gathering itself, the fieldworkers and possible errors which may occur (Monette et al. 2005: 95). The feasibility study is especially important with a view to the practical planning of the research project such as the transport, finance and time factors of the envisaged study.

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SECTION
C

This aspect of the pilot study can alert a prospective researcher to possible unforeseen problems which may emerge during the main investigation. Thus, by undertaking a careful feasibility study, the researcher can ascertain facts about the neighbourhood where the investigation will be done, such as the accessibility of respondents, the safety of the area after dark and whether women could safely be used as fieldworkers (Sarantakos 2000: 293). The researcher may, for instance, find that the homes in the areas to be researched are situated far from one another owing to vacant sites, and that car transport will be imperative during the main investigation.

The nature of the problem, the extent to which it is known to the researcher, the previous experience of the researcher, and the quantity and quality of the information available on the relevant subject will determine the manner, range and depth of the relevant feasibility study. Researchers should undertake an actual thorough study, on a small scale, of the real total community where the main investigation will take place. This may mean that they will have to spend a fair amount of time in the relevant community in order to orientate themselves to the real practical situation which is unique to each specific community.

A feasibility study is a very valuable way of gaining practical knowledge of and insight into a certain research area. Prospective researchers make a grave error if they plan their project exclusively in their office without exploring the practical situation in the research field. Even if they have considerable knowledge and experience of research, it still remains important to be prepared thoroughly for every possible specific and unique situation that might come to the fore during the main inquiry.

Since qualitative research is usually conducted in a smaller area with fewer respondents, but in greater depth and over a longer period of time than in quantitative research, it is of prime importance to undertake as comprehensive and accurate an assessment as possible of the real situation to be investigated. During this phase of the pilot study the researcher may already form an opinion on the openness of the community or group of respondents, their willingness to cooperate, and the number of respondents likely to be involved until saturation of data is achieved.

TESTING THE MEASURING INSTRUMENT

Apart from gaining an overview of the relevant literature, conducting discussions with a representative group of experts and exploring the actual research area, the prospective researcher should also test the measuring instrument that is to be utilised during the study. Yegidis and Weinbach (1996: 191) state that whatever these various aspects of a pilot study contribute to an improved main inquiry, there is no substitute for the feedback from the respondents themselves. This implies that the researcher should expose a few cases that are similar to the planned main inquiry to exactly the same procedures as planned for the main investigation in order to modify the measuring instrument (Yegidis & Weinbach 1996: 132). This can be seen as the field testing of the instrument prior to using the final instrument in the actual study.

Choosing a few cases arbitrarily and exposing them to the pilot study may already be valuable for the main investigation (Mitchell & Jolley 2001: 127). Sections of the questionnaire or the total questionnaire, if appropriate, should be tested

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with a section of the population. The selected respondents should be asked about ways of improving the questionnaire and generally provide as much feedback as possible. The testing of the measuring instrument should also assist the researcher in discarding confusion, annoyance, boredom, offensive language, and poorly worded or confusing questions (Alston & Bowles 2003: 109; Glicken 2003: 89).

However, what may be even more valuable is to correctly select a small sample from the cases to be subjected to the main investigation. By selecting a number of respondents representative of the population that also cover the variability which exists in the population, the researcher will ensure that most of the possible obstacles and errors with the questionnaire will be avoided (Alston & Bowles 2003: 111; Babbie 2007; 257; Grinnell & Unrau 2005: 347–348). Participants should be encouraged to ask any questions that they might have as they respond to the questionnaire. This will ensure that the researcher will be able to say that he or she expects to investigate the same kinds of cases in the main investigation, only on a much larger scale.

The correct selection of respondents will contribute to the emergence of meaningful insights which can, for instance, be utilised or modified in the final questionnaire or interview schedule used in the main investigation. The pilot study must be executed very carefully in exactly the same way as the main investigation. If the researcher were, for example, to apply the case study method during the pilot study, and the expected results were not obtained, the pilot study would have to be repeated in order to test the modified procedure. This method can identify deficiencies in the measuring instrument, help the researcher to plan the contents of the different interviews better, or help him or her to decide to increase or decrease the number of interviews in the light of the findings of the pilot study.

This aspect of a pilot study is often difficult to perform in a qualitative investigation, yet it is very important. In the event of the main investigation involving the study of only a few cases over a long period of time, it would be cumbersome to conduct a pilot study in exactly the same manner, since this would be tantamount to repeating the main investigation. The testing of the measuring instrument should rather be avoided in such cases, or undertaken in some other way, such as by conducting a few relevant interviews, doing a few relevant observations, or reviewing a few documents.

2.1.3 Value of a pilot study

Since the purpose of the pilot study is to improve the success and effectiveness of the investigation, space must be given on the questionnaire, during the interviews or with whatever data collection method is used, for criticisms or comments by the respondents. The researcher must then carefully consider these comments during the main investigation.

The pilot study must be executed in the same manner as is planned for the main investigation. For example, if the researcher plans to mail the questionnaires in the main investigation, this must be done during the pilot study. Alternatively, if personal interviews are being planned, the pilot study must be conducted by means of personal interviews (Bailey 1994: 144). If this is not done, the pilot study will not be of much value, as the researcher will still not know if the method he or she has in mind will be effective. The following issues can be considered as some of the value of

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SECTION C

a pilot study.

■ SUITABILITY OF THE INTERVIEW SCHEDULE OR QUESTIONNAIRE

The pilot study offers an opportunity to test the interview schedule with, for example, the kind of interviewer and the kind of respondent that will be used in the main investigation. If the questionnaires are going to be mailed, one should physically try out the procedures for assembling and mailing them.

Babbie (2001: 250) says that no matter how carefully a data-collection instrument is designed, there is always the possibility of error, and the surest protection against such error is pretesting the instrument. It may emerge from the pilot study that a significant number of respondents skip a certain question or interpret it incorrectly. Moreover, the measuring instrument should not constrain participants from saying what they want to say; this is equally true for both qualitative and quantitative studies (Ritchie & Lewis 2003: 135). Respondents and interviewers should be asked to comment on the wording of the questions, the sequence of the questions, possible redundant questions, and missing and confusing questions. Certain patterns of reactions should also be considered.

A pilot study is valuable for refining the wording, ordering, layout and filtering, and in helping to prune the questionnaire to a manageable length. The wording of a questionnaire is very important because this can substantially influence the reactions of respondents. Even small changes in the wording of an item can make a considerable difference. The pilot study can indicate effectively whether a certain question or the total questionnaire is correctly worded.

The physical appearance of the questionnaire is very important. Bailey (1994: 145) mentions that the length of the questionnaire, the type and colour of paper used, the letter type and the layout of the typing are of crucial importance in the whole investigation. Comments and recommendations in this regard are of immense value to a prospective researcher. It is, of course, not imperative or even possible to react to all recommendations. The researcher must differentiate between those that are meaningful and meaningless.

The actual programme can also be tested on a small sample. This allows the evaluator to identify any difficulty with the procedure or materials and to determine the accuracy, reliability and appropriateness of any instruments to be used in the programme (Neuman 2003: 181). The main value, however, remains that modifications can be made to the questionnaire/measuring instrument after the pilot study and prior to the main investigation. The result is almost always an improved measuring instrument and a more meaningful main investigation.

■ TESTING AND ADAPTING THE MEASURING INSTRUMENTS/APPARATUS

If the specific measuring instruments such as own scales, assessment scales and standardised scales have been tested carefully during a pilot study, no or rather fewer problems should be experienced during the main investigation. During the pilot study the researcher may find, for instance, that a certain measuring instrument is not sufficiently applicable to the South African situation, or that it does not differentiate clearly enough between a pre- and posttest, or that it lacks validity, reliability and sensitivity. The total instrument or only a section of it can be tested during the pilot study in order to increase its reliability (Neuman 2003: 181). If a

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measuring instrument has been thoroughly tested during the pilot study, certain modifications can be made for the main investigation, if deemed necessary. According to Neuman (2003: 257), all apparatus, such as computers, video cameras and tape recorders, that will be used during the study should also be pilot tested.

DETERMINING THE NUMBER OF CODES PER QUESTION

Without a pilot study it is difficult to provide all the alternative responses to a question and thus to code accordingly. If the pilot study is handled by means of open questions, the number of possible responses to questions can be determined with a view to using closed questions in the main investigation. If a meaningful pilot study is not conducted, the researcher may find him- or herself in the difficult position of having allowed a number of codes per question which turn out to be insufficient during the main investigation. Changes to the questionnaire at that late stage of the study are only possible at great cost and effort.

SUITABILITY OF THE PROCEDURE OF DATA COLLECTION

A pilot study can also give a clear indication of whether the selected procedure is the most suitable one for the purposes of the investigation. Prospective researchers must be clear on whether they want quantitative, qualitative or a combination of both kinds of data. They will then proceed to do an exploratory, descriptive or explanatory study. Subsequently, they will select the most suitable procedure and apply it in a pilot study on a small scale.

If the selected procedure appears to be unsuitable during the pilot study, another one can be selected and a second or even third pilot study undertaken, until the researcher is satisfied. If the strategy of the investigation is changed and another procedure selected, a pilot study must be performed again in order to ascertain whether the modified procedure will yield the desired results.

SUITABILITY OF THE SAMPLING FRAME

A sample is drawn according to a certain sampling frame, and the pilot study offers the researcher the opportunity of testing its effectiveness. Some frameworks, such as voters' lists, are generally known and are used freely in sampling. The selection of a sample may appear relatively feasible on paper, but turn out to be unfeasible in practice. When an unknown frame is used, its comprehensiveness, accuracy, convenience, recentness and relevancy should be pretested.

Whether problems with the sampling frame which emerge from the pilot study are indeed solvable is another question. However, the important thing is to be aware of these problems before the main investigation commences. The pilot study can thus be very valuable in determining the suitability of the planned sampling frame.

VARIABILITY OF THE POPULATION

Prospective researchers can determine the variability of a population by means of a pilot study. They can, for instance, determine the highest and lowest academic qualifications in the research group and then collect this information during the main investigation by means of a closed question.

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SECTION C

Because the pilot study is of limited scope, it is not desirable to rely only on the pilot study in determining the full spectrum of a population. The researcher should also consult existing statistical sources as supportive information. The pilot study can thus offer information additional to existing statistics about a certain community or population.

EXPECTED NON-RESPONSE RATE OR PERCENTAGE

The percentage of non-responses of the pilot study can be carried over to the main investigation if the same procedure is applied in the same manner. The researcher may therefore conclude that the non-response factor is too high and that modification of the strategy is necessary. In the light of the results of the pilot study, the effectiveness of the different ways of reducing the non-response rate can be compared with one another. As a result, one data-collection method may be chosen in preference to another, some questions may be excluded, the timing of interviews may be altered, and the training of fieldworkers may be improved.

Each researcher strives to decrease the non-response rate. Since mailed questionnaires normally have a high non-response rate, better results may be achieved by the inclusion of a franked envelope or even a gift voucher or surprise on receipt of the completed questionnaire. All the different methods can be evaluated by means of a pilot study and the researcher can thus come to a decision on the best method. The pilot study definitely indicates to the researcher whether the investigation is in place or whether problems are likely to emerge during the main investigation.

EFFECTIVENESS OF THE TRAINING OF AND INSTRUCTIONS TO THE FIELDWORKERS

The completion of a few questionnaires by means of a pilot study is already part of the training of fieldworkers. If, however, fieldworkers are found to be making too many errors or not making relevant comments where desired, they can be subjected to further training. If too many errors are committed during the completion of these initial questionnaires, this may be ascribed to instructions being inadequate or the interviewers doing a poor job. Thorough training of and clear instructions to fieldworkers in order to maximise the success of an investigation cannot be overstressed.

Prospective fieldworkers should not only receive briefing beforehand, but also debriefing at the end of the pilot study. In such a discussion the sequence of the questions, unclear questions and the manner of approach, among other topics, can be covered. This method will give the researcher a clearer picture than studying the completed questionnaires only. A few audiotaped interviews can also be played to the fieldworkers after the pilot study or role playing can take place.

EFFECTIVENESS OF THE ORGANISATION IN THE OFFICE AND IN THE FIELD

Pilot testing normally provides the first elements of substantiation and reality contact for the application of the main inquiry. A careful formulation of the problem can and should only be attempted after researchers have brought themselves up to date on all available knowledge about the relevant subject, and after they have also acquainted themselves with the specific area of investigation. The pilot study offers

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an excellent opportunity for determining the effectiveness of the organisation in the field and in the office, and especially the communication between the office and the field. The pilot survey will certainly help to clarify many of the problems left unsolved, but it will not necessarily solve all the troubles that might be experienced in the main investigation.

The composition and selection of the office staff and the fieldworkers are very important during the pilot study, so that the most suitable and motivated staff can undergo further training. The number of staff members is also very important, so that there are not too few people to do the work, but also not too many, which again can hamper control.

In comprehensive projects it is a good idea to have a project director who carries final responsibility and fulfils the role of coordinator of the project. A manager in the office and one for the fieldwork, who are both accountable to the project director, are also needed. The pilot phase of the study should reveal how all basic functions can best be blended at the top level in order to have the best possible main inquiry. Since the pilot study occurs on a small scale, it is, naturally, impossible for all the problems to emerge. It is only when the main investigation is undertaken on a large scale that it is possible to determine the extent to which the total research machine is running on oiled wheels. The pilot study does, however, give an indication of what changes are necessary in order to ensure a successful, scientific main investigation.

ESTIMATE OF COSTS AND LENGTH OF MAIN INVESTIGATION

Monette et al. (2005: 95) and Royse (2004: 201) mention time and money as two related issues that are of prime concern in the feasibility of any project. Information emerging from a pilot study can enable a tentative estimate to be made of the cost and length of the main investigation. If it seems that the main investigation will be too costly and time consuming, possible suggestions for economising may emerge from the pilot study. Modification in the strategy and procedures can, for instance, be suggested in order to decrease the expenses of the investigation and shorten its duration.

Cost and duration of investigations are very important concerns and demand careful analysis by the research team. The pilot study can, even at this early stage of the investigation, offer certain indications to researchers which may either reassure them or suggest that they modify their strategy, without there being dramatic consequences.

INVOLVEMENT OF THE RESEARCHER

A pilot study represents the first-hand, direct involvement of a researcher with the social environment in which the investigation will take place. The researcher should acquire practical experience of the relevant community during the pilot study and take cognisance of the complexity and dynamics of the particular field of research. Pilot data are important because they demonstrate the researcher's expertise in a specific area and serve as a basis on which the proposed research is built (Thyer 2001: 495).

The pilot study should also indicate clearly to prospective researchers whether their own involvement in the field and in the office is adequate. The pilot study can,

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for example, show that they are too involved, which may cause subjectivity. They should thus obtain a clear indication from the pilot study of whether they are either over- or under-involved in the project.

ANALYSIS OF THE DATA

An interested researcher will process the data collected during the pilot study and address obstacles one by one. Tabulation of the aggregated data should be undertaken to ascertain whether the responses reflect sufficient variation to test the study's hypothesis or to reflect the validity of the findings. The analysis of the data should be done in such a manner as to ensure that the intended statistical analysis or intended qualitative themes can be done.

Unforeseen problems may only crop up during the data analysis phase, and some of these may be insoluble. If it appears that the data are not suitable for testing the particular hypothesis, or that the desired and expected results cannot be obtained, there is still enough opportunity to make the necessary modifications in time for the main investigation.

The pilot study should move carefully through all the steps of the research process and therefore also include processing and interpretation of the data collected. However, researchers should be wary of making any statements or generalisations from the data of a mere pilot study. This will only pre-empt the main investigation and lead to subjectivity.

EVALUATION OF THE STUDY

On completion of all the aspects of the pilot study, researchers should use the opportunity to carefully evaluate the total pilot study. By thorough step-by-step evaluation they can determine the weak and strong points of the investigation, where modifications should be made and where, more or less, attention should be focused. This final evaluation of the pilot study is thus the last opportunity for any modifications to be made to the main investigation, or for the green light to be given to proceed with the main investigation without further ado.

To summarise, the purpose of a pilot study is to give direction to the main investigation. However, researchers should guard against being overly influenced by the indications from a pilot study. They must also be wary of statements and generalisations based only on the findings of a pilot study. The pilot study is only one step in the research process, and its main purpose is to ensure that the main investigation itself will be worthwhile. A pilot study also gives an indication of which errors can be avoided in what ways, and of aspects for which no provision has been made. The framework of a research project remains temporary until it has been tested by means of a pilot study.

The ideal modus operandi, as described in this chapter, can naturally not be followed rigidly. However, this does serve as a valuable guideline. The pilot study can thus assist in sidestepping most problems, although new or unidentified ones may emerge at a later stage. The pilot study is a last opportunity to avoid possible problems or to make certain modifications.

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SUMMARY

In this chapter it is noted that a pilot study serves to orientate researchers towards their research field; to aid the formulation of their research problem; to plan their modus operandi; and to determine the range of their investigation. During the pilot study, researchers test the various aspects of their project on a small scale, not yet intending to generalise their findings.

First, an introductory literature study is done, which might be followed by discussions with experts in the field of research. Then follows the feasibility study, during the course of which researchers investigate the practical framework of their proposed activity, including their resources, research population, procedures of data collection, data gathering itself, fieldworkers, and transport, finance and time factors. The fourth aspect of the pilot study, namely the testing of the measuring instrument, means that a handful of respondents are taken through the whole planned research process to test whether its elements, particularly the measuring instrument, function as planned.

Finally, the chapter provides practical hints on many details of the pilot study, including drawing up, testing and adapting a suitable questionnaire; deciding on a procedure for data collection; determining the suitability of the sampling frame and the variability of the population; estimating the non-response rate to be expected and choosing measures to counter non-response; training, briefing and debriefing fieldworkers; the organisation of and cooperation between office and field; estimating costs; the measure of the researcher's personal involvement; methods of data analysis; and the evaluation of the pilot study as a whole.

Self-evaluation and group discussion

You have just completed your own pilot study. Explain the following to your tutor or study group:

- How you went about conducting the pilot study
- What the main findings of the pilot study were

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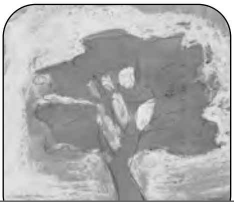

16

CB FOUCHÉ & A BARTLEY

Quantitative data analysis and interpretation

Learning objectives

Studying this chapter should enable the reader to

- understand the fundamentals of measurement and analysis
- become acquainted with the nature of data coding; univariate, bivariate and multivariate data analysis and statistical interpretation.

1. INTRODUCTION

Although quantitative data analysis is a diverse and complex process, it has become relatively easy, with clear step-by-step processes and the aid of computerised data analysis software. The aim of this chapter is not, however, to provide a comprehensive understanding of a range of quantitative statistical methods and computerised software, as this would necessitate a more in-depth study. The emphasis in this chapter is rather on assisting the reader to grasp the fundamentals of organising and analysing quantitative data and the basic statistical analytical methods frequently used. We will show how a well-designed research study and proper planning make quantitative (empirical) research projects a relatively easy, and potentially absorbing, step-by-step procedure.

As has been outlined in previous chapters, data analysis and interpretation are a phase in the research process. Before getting to data analysis researchers will have performed a literature review, decided on a relevant theoretical approach, chosen one or more research questions, and designed a proper method for collecting the data (data-gathering instruments or methods). They will also have chosen an appropriate research design and a sampling approach (probability or non-probability), and have gained access to the population that they wish to sample. They may have decided to collect (primary) data, or use existing data – data collected by some-

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one else for another purpose. The ethical principles of voluntary and informed participation, confidentiality, anonymity, non-harm and possibly also feedback of important research findings to the sample groups afterwards will have been negotiated. Ideally a data analysis plan should be constructed before doing the actual data collection and analysis. As Monette, Sullivan and DeJong (2008: 364) remind us, even though the actual data analysis occurs toward the end of a research project, many of the related issues will have been settled – or at least envisioned – before any data are actually collected. It is important to keep in mind that, although the research process is usually described in texts as a set of discrete steps undertaken in a linear order, this is not how research is actually done. Without determining very early in the design process the depth and types of analysis that are to be done, quantitative researchers risk asking the wrong questions, or asking them in a way that produces the wrong kinds of data.

Quantitative data analysis, according to Rubin and Babbie (2005: 552), can be regarded as the techniques by which researchers convert data to a numerical form and subject it to statistical analysis. The purpose of analysis is thus to reduce data to an intelligible and interpretable form so that the relations of research problems can be studied and tested, and conclusions drawn. Monette et al. (2008: 364) view statistical analysis as procedures for assembling, classifying, tabulating and summarising numerical data to obtain meaning or information. Data analysis (in the quantitative paradigm) does not in itself provide the answers to research questions. Answers are found by way of interpreting the data and the results. To interpret is to explain and to find meaning. David Royse (2008: 318) likens the process of quantitative analysis to the process of translation, in that the researcher presents from the raw data a meaningful picture of patterns and relationships.

Quantitative data in professional research can be analysed manually or by computer. If the sample is relatively small, some statistical analyses can be performed manually with calculators. One can also compute most statistics with a spreadsheet program such as Microsoft Excel. However, given that data analysis these days is almost always conducted with the assistance of computers, researchers benefit from the many available software applications for personal computers that are now available or the range of many statistical software programs, such as SPSS (Field 2005). All these programs enable researchers to enter their data and perform the statistical computations with ease. In fact, even the quantification of data is made easier with computer programs.

2. FUNDAMENTALS OF MEASUREMENT AND ANALYSIS

2.1 Measurement levels

Before analysing the data, one has to make sure of the measurement level of the data that were collected. There are variables which denote *categories,* while other variables give *measurements* or *counts*. Therefore variables are divided into two broad classes: categorical and numerical data (see Table 16.1).

A nominal variable indicates to which group a subject belongs or the absence or presence of some quality. Because the categories of a nominal variable do not fall into any sort of inherently rankable order, no arithmetical operations like addition,

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SECTION
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Table 16.1 Levels of measurement

Level	Description	Examples
Nominal	Classify into categories	Sex, gender, race, province, marital status, religion
Ordinal	Order by rank or magnitude	Employment status, disability status
Interval	Distance between values is meaningful, but without an absolute zero	Aptitude tests, intelligence tests, personality tests, knowledge tests
Ratio	Distance between values is meaningful, and there is an absolute zero point	Age, height, weight, distance, number of dependants, salary

subtraction, multiplication or division can be performed on such data. These categories are often coded, for example Unmarried (marital status = 1), Married (marital status = 2), Partnered (marital status = 3), Widowed (marital status = 4), Divorced (marital status = 5) etc., but these are not numbers on which one would do arithmetic. No one marital status is inherently *more* than any other! Typical nominal variables are region or province, gender, race or ethnic group, marital status, country of citizenship and home language.

Typical ordinal values are socio-economic status, class, employment status (unemployed but not seeking work, unemployed and seeking work, temporary worker, full-time worker), disability status (on a continuum from not disabled to severely disabled), and any ranking such as high/middle/low, junior/mid-level/senior. We can also reduce an interval level variable to an ordinal measurement level by collapsing discrete values into ranges. For example, the number of service years of social workers at a particular agency can be converted into three categories: SERVICE = 1: less than two years; SERVICE = 2: between two and ten years; SERVICE = 3: more than ten years.

It is obvious that the variables MARITAL STATUS and SERVICE differ in one important aspect. In the case of SERVICE there is a definite rank ordering, as SERVICE = 1 is less than SERVICE = 2. SERVICE is an ordinal variable, whereas MARITAL STATUS is a nominal variable. Interval level variables take on numerical values and are usually obtained by measuring or counting. Examples are IQ of students, aptitude tests, intelligence tests, personality tests, knowledge tests, etc. Here arithmetic can be performed. A student who obtained 45 per cent in a test has half as many marks as a student who obtained 90 per cent.

A characteristic of a ratio scale is that there is an absolute zero on the scale regardless of the units. Relative comparisons can be made: 0 metres = 0 millimetres = 0 feet. Temperature, measured in °C and °F, is an example of an interval scale. 20°C is twice as warm as 10°C, but when we transform to the Fahrenheit scale, 68°F is not twice as warm as 50°F. The reason is that 0°C is not the same a 0°F. It is often not easy to recognise whether a variable is measured on a ratio or interval scale. Variables often measured on the ratio scale include number of children, age, height, weight, distance, number of dependants and salary.

The statistical techniques used in analysing data depend on the type and number of variables as well as the level of measurement one is working with. This will be demonstrated later in the chapter.

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2.2 Methods of analysis

Quantitative methods of analysis fall into four main categories, according to Blaikie (2000: 236–237), namely descriptive, association, causation and inference.

Descriptive methods are used to report the distributions (or spread) of a sample or population across a wide range of variables (using all four levels of measurement as discussed above). The aim of these methods is to produce a scope of the characteristics of such distributions through frequencies, measures of central tendency and measures of dispersion. Techniques of *association* are used to establish whether positions on one variable are likely to be consistently associated with positions on another variable through, depending on the level of measurement and the number of variables analysed, either correlation, analysis of variance or regression. The search for *causation* involves the use of factor analysis, path analysis or regression in an attempt to determine the network of relationships between variables. Methods of *inference* are used both to make estimates of population characteristics from the sample's characteristics and to establish whether relationships within a sample can be expected to assist in predicting (other than by chance) relationships in the population from which the sample is drawn. This is done through various types of tests of significance.

Descriptive statistics are procedures that *describe* numerical data in that they assist in organising, summarising and interpreting sample data (Monette et al. 2008: 414). Inferential statistics, on the other hand, use probability theory to test hypotheses, permit inferences from a sample to a population and test whether

Table 16.2 Categories of data analysis techniques

Category	Aim	Method of analysis
Descriptive	Describe the distribution of the sample (numerical data) • Frequency • Central tendency • Dispersion	Univariate (focusing on one variable)
Association	Assess the association of the position of one variable with the likely position of another variable • Correlation • Analysis of variance • Regression	Bivariate (comparing two variables)
Causation	Determine the network of relationships between variables • Factor analysis • Path analysis • Regression	Multivariate (comparing more than two variables)
Inference	Estimate population characteristics from sample characteristics and sample differences to population differences • Different types of tests of significance	Multivariate

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descriptive results are likely to be due to random factors or to a real relationship (Kreuger & Neuman 2006: 350). Descriptive statistics can be used with data from all levels of measurement, but it is only data from interval and ratio levels that are amenable to analysis using inferential statistics. Descriptive statistics are most commonly used in quantitative research studies and as such will form the main focus of the discussion in this chapter. The mechanics of causation and inference will not be covered in any detail as this requires a background in statistics.

3. PHASE 5: DATA ANALYSIS, INTERPRETATION AND PRESENTATION

3.1 Data preparation

After having collected the data, they must be prepared for data entry. According to Sarantakos (2005: 364), data preparation includes checking and editing collected data and eventually coding them. Coding means systematically reorganising raw data into a format that is machine readable (Kreuger & Neuman 2006). Most of the methods of statistical analysis discussed above and in fact many statistical programs require that the raw data be in the form of numerical codes or numbers for either manual or computerised analysis. Depending on how the data were collected, many or all may already be in numerical form. If not, a coding procedure or code sheet (a set of rules stating that certain numerical values are assigned to variable attributes) and a code book (a document of a few pages describing the coding procedure and the location of the data for the variables) will assist in the understanding of the meaning of values (Kreuger & Neuman 2006).

Suppose we wish to find out if there are differences in employment experiences and job satisfaction among male and female university students. After designing a questionnaire, selecting a sample and collecting the data, a code sheet is created. Code sheets are useful in that they provide both the guide and the record of how the responses gathered from the questionnaire are to be coded. This is especially important if more than one person is doing the data entry, because all responses must be coded consistently for any analysis to be valid.

An important point to note, with regard to the code sheet, is that every response should be coded, including non-responses. This is so that all responses to every question can be accounted for, both in the analysis of the data and – importantly – when checking for data entry errors. Some non-responses will be legitimate; for instance, in the example above, some survey participants may not be employed, therefore they will not have answered the questions about how many hours they work or their level of job satisfaction. Instead of merely leaving those responses blank, they are coded as legitimate non-responses, as "Skip" responses. Other types of non-response may reflect participants' particular sensitivities: some participants refuse to answer questions about their age or income, for instance, or their religious inclinations. Again, those non-responses should be coded; the convention is that such refusals are given the code "7" – or, if the response set already has seven categories, "77". Other "missing data" conventions are: "8" (or "88", or "888") for responses of "don't know" (when "don't know" is not one of the response options) and "9" (or "99" or "999") for non-responses that are not accounted for; either the interviewer neglected to ask the question, or record the response, or – in the case of self-

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Table 16.3 Data code sheet

Variable	Values	Measurement level
Case	[A reference number for each questionnaire]	–
Gender of respondent	1 = Male 2 = Female	Nominal
Age of respondent	[Age in years]	Ratio
Course of study	1 = Sub-degree programme 2 = Undergraduate degree 3 = Postgraduate degree	Ordinal
Number of hours worked weekly	[Hours worked] 0 = Skip (not in employment)	Ratio
Job related to qualifications	0 = Skip 1 = Very closely related 2 = Fairly closely related 3 = Neither related nor unrelated 4 = Not very closely related 5 = Not related at all	Ordinal
Job satisfaction scale	0 = Skip 1 = Very satisfied 2 = Fairly satisfied 3 = Neither satisfied nor dissatisfied 4 = Fairly dissatisfied 5 = Very dissatisfied	Ordinal

administered questionnaires, the respondent simply did not answer the question (Davidson & Tolich 2003). Software packages such as SPSS allow such designated codes to be identified as specific missing values, so they are not included when calculating statistical functions.

The point of coding these non-responses is twofold: firstly, although non-responses are not particularly useful in the analysis of the survey data, the specific reasons for those non-responses may provide interesting insights into the participants (Monette et al. 2008). The other reason for coding non-responses is more pragmatic: coding each response to every question, and entering a value in the dataset for each response, helps to detect data entry errors, as missing spaces in the spreadsheet would be detected easily. Using the illustration of university students' job satisfaction, we might set several non-responses codes, as presented in Table 16.4.

3.2 Data entry

Most computer programs designed for data analysis need the data in a grid format, such as a spreadsheet. According to Rubin and Babbie (2005: 556), there are many ways to accomplish this, depending on the way data have been collected, as discussed in Chapter 12. If, for instance, data have been collected by questionnaire,

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SECTION C

Table 16.4 Code sheet with non-response codes

Variable	Values	Measurement level
Annual income ("What was your income from employment activities last year?")	0 = Skip (not in employment) 1 = R10–R10 000 2 = R10 001–R50 000 3 = R50 001–R100 000 4 = R100 001–R150 000 5 = R150 001–R200 000 6 = R200 001–R250 000 7 = R250 001–R300 000 8 = R300 001–R350 000 9 = R350 001–R400 000 10 = R400 001+ 77 = Declined 88 = Don't know 99 = Not ascertained	Ordinal

the coding might be done on the questionnaire itself and the codes entered into the spreadsheet manually. Sometimes researchers use optical scan sheets that can be converted into data and imported into the computer program. Rubin and Babbie (2005) remind us that sometimes data entry occurs in the process of data collection, such as with online surveys constructed in such a way that respondents enter their own answers into the database without additional data entry needed. The same process occurs in computer-assisted telephone interviewing (CATI) where interviewers' key responses are typed directly into the computer, ready for analysis.

The spreadsheet consists of columns that contain the variables or question responses. Each case or respondent corresponds to a row. The cell or box where each row and column meet represents the specific response or value or score or datum (*datum* is the singular of *data*) that the respondent or subject gave for that question or item. In the example in Figure 16.2, the 14 rows and six columns result in 84 cells or values.

The data collected in the study on male and female university students with regard to job satisfaction can now be entered on a spreadsheet.

3.3 Step 12: Process and analyse data and interpret results: univariate analysis

Univariate statistics describe one variable (*uni-* refers to *one*, and *-variate* refers to *variable*), bivariate describes two (*bi-* refers to *two*) and multivariate refers to three or more variables (Kreuger & Neuman 2006: 329). The simplest form of data analysis is univariate analysis, which means that one variable is analysed, mainly with a view to describing that variable. Basically this means that all the data gathered on that one variable need to be summarised for easy comprehension and utilisation. This summary can take on different forms, such as a tabular or graphic display or visual representation of the data. This display provides the researcher with useful

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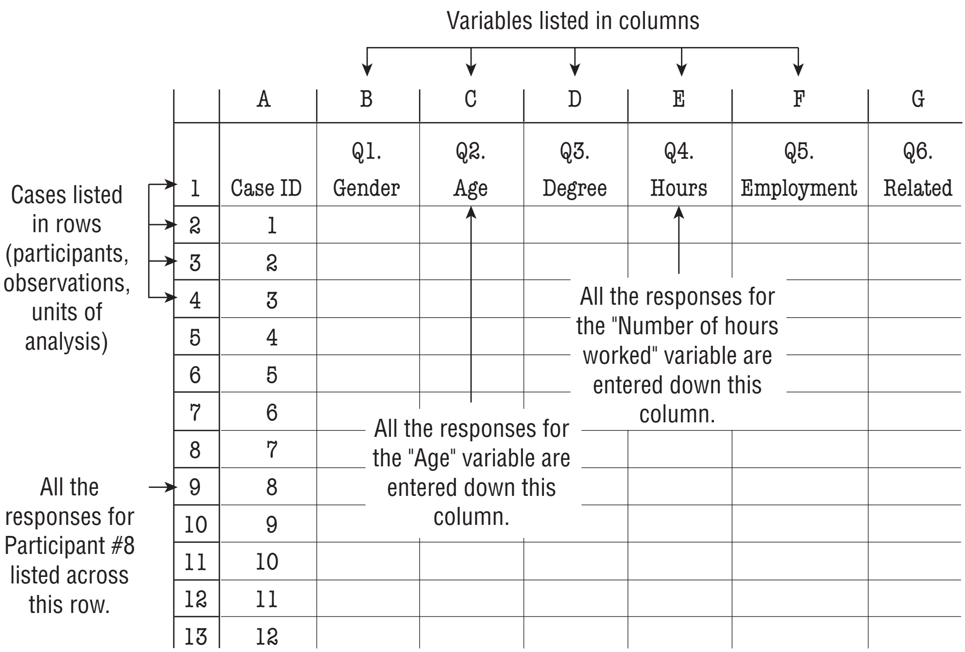

Figure 16.1 Example of a spreadsheet

information in and of itself, and provides the foundation for more sophisticated analysis at a later stage.

The first, most elementary type of summary and display of data collected on one variable, which is used very often, is the frequency distribution.

3.3.1 Frequency distributions

There are two main types of frequency distribution. They include the simple frequency distribution and the grouped frequency distribution, which are frequency distributions in table form. There are various graphic ways in which frequencies may be displayed, such as the bar graph, histogram, frequency polygon, pie chart and pictogram. The specific type of display suitable depends, of course, on the type of variable and the level of measurement we are working with. Sarantakos (2005: 368) highlights seven rules of data presentation that should be kept in mind in selecting the most appropriate type. These include clarity, simplicity, economy of space, order of variables, appearance, accuracy and objectivity.

SIMPLE FREQUENCY DISTRIBUTION

Constructing a simple frequency distribution, also referred to as an absolute distribution, involves counting the occurrences of each value of the variable and ordering them in some fashion. To illustrate, we will use data from a New Zealand survey project called "Pathways to Sustainable Employment". This project conducted a telephone survey of 966 individuals aged 15–34 to ascertain patterns in the pathways that younger workers forged into employment (Dupuis, Inkson & McLaren

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	A	B	C	D	E	F	G	H
1	Case ID	Q1. Gender	Q2. Age	Q3. Degree	Q4. Hours	Q5. Employment	Q6. Related	Q7. Satisfaction
2	1	1	19	2	20	2	4	4
3	2	1	22	2	25	2	3	4
4	3	2	23	3	50	2	1	2
5	4	2	33	3	0	1	0	0
6	5	2	20	2	40	2	2	1
7	6	1	21	1	15	2	5	3
8	7	2	21	2	0	1	0	0
9	8	2	19	1	0	2	4	5
10	9	1	23	3	12	2	2	3
11	10	1	27	3	0	1	0	0
12	11	2	21	2	0	1	0	0
13	12	1	22	3	40	2	1	4

Figure 16.2 Data entry on a spreadsheet

2005). Participants were asked specific sets of questions depending on how they identified their "main activity", for example studying, self-employment, fulltime or part-time employment, at home caring for others, etc. All respondents who indicated that they were currently in any form of employment were asked to identify their occupation. Their responses were then coded to reflect the nine major occupational categories used in the New Zealand census (Statistics New Zealand 2008).

Table 16.5 Q43a: Occupational group codes

	Code
Skip	0
Legislators, administrators and managers	1
Professionals	2
Technicians and associate professionals	3
Clerks	4
Service and sales workers	5
Agriculture and fishery workers	6
Trades workers	7
Plant and machine operators and assemblers	8
Elementary occupations	9
Other	10

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It is easy to imagine how cumbersome it would be to tally manually all 658 responses to this question – we would end up with enormous tables full of ticks! It could be done that way, of course, and at the end of the process we could summarise those tallies in a single table. We could then also calculate the proportion of the responses for each category simply by dividing the number of responses in each category (designated "N" in the table below) by the total number of responses (658). Spreadsheet applications merely make the process easier by making those calculations automatically. Such frequency counts, and their relative percentages, are descriptive statistics, because they merely describe the distribution of responses to a single variable.

Table 16.6 Q43a: Occupational group (N = 658)

	N	%
Legislators, administrators and managers	46	7,0
Professionals	93	14,1
Technicians and associate professionals	87	13,2
Clerks	90	13,7
Service and sales workers	219	33,3
Agriculture and fishery workers	11	1,7
Trades workers	62	9,4
Plant and machine operators and assemblers	25	3,8
Elementary occupations	24	3,6
Other	1	0,2
Total	658	100,0

In presenting the frequency distribution data one should be sensitive to the need to present the data clearly, and in a method that will be grasped most easily by those reading them. In Table 16.6, the frequencies are presented in the order that the categories are coded – and, while not an ordinal variable, it is clear that there is a kind of ordering of the categories, with legislators, administrators and managers at one end and those in elementary occupations (which include occupations such as unskilled labourers, cleaners and rubbish collectors) at the other. When there is a logical ordering of categories, frequency distributions are often presented to reflect that order. However, another popular convention, in the interests of presenting the data clearly, is to order the data according to the frequencies so that readers may discern more readily the distribution of responses. In Table 16.7, the same table is re-ordered according to the frequency distribution. Which table presents the relevant data more clearly?

When performing univariate analysis on nominal variables (i.e. variables containing categories which are not necessarily ranked), there are three key factors to consider:

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SECTION C

Table 16.7 Q43a: Occupational group (N = 658)

	N	%
Service and sales workers	219	33,3
Professionals	93	14,1
Clerks	90	13,7
Technicians and associate professionals	87	13,2
Trades workers	62	9,4
Legislators, administrators and managers	46	7,0
Plant and machine operators and assemblers	25	3,8
Elementary occupations	24	3,6
Agriculture and fishery workers	11	1,7
Other	1	0,2
Total	658	100,0

- The overall distribution of the responses
- The measure of central tendency
- Measures of dispersion

DISTRIBUTION

The first question to ask when looking at a frequency distribution table is how evenly spread the responses are. Are the proportions reasonably evenly distributed across most categories or are there some categories that are especially large or small? In the example above, it is clear that responses are not evenly distributed across the nine main occupational categories (plus the "Other"). Instead, fully a third of the sample falls into a single category – sales and service workers. Three other occupational categories each have 13–14 per cent of the responses. These four categories alone account for three-quarters of all the responses.

CENTRAL TENDENCY

"Central tendency" is a way of asking: "What is the typical response?" When dealing with nominal variables – those on which we cannot perform mathematical calculations, because there is no relative *valuing* of the categories – the measure of central tendency used is the *mode*. The mode is simply the most commonly occurring category, the one that has the largest number of responses. In the example above, the modal category is sales and service workers. Some frequency distributions produce more than one mode – that is two or more categories can each have the same large proportion of responses. When a variable has two modes, the distribution is *bimodal*; when it has three or more, it is called a *multimodal* distribution.

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DISPERSION

Having identified the modal category – the most common response – in a variable, the next question to ask is: "*How* typical is it?" In other words, what proportion of responses is not captured by the mode? On its own, the mode does not tell us this; we must calculate the *variation ratio.* This is simply a calculation of the percentage of responses not in the modal category. This is useful to know, because if the variation ratio is low, the mode can be said to more strongly represent a typical response. In our occupations example above, 67 per cent of the sample are not in the modal category. The variation ratio is therefore 0,67; this univariate statistic suggests that there is a significant dispersion of responses in the occupation variable, and the modal category is not especially typical of the sample.

The next challenge in univariate analysis is to attempt to draw some meaning from the data. The fact that a significant minority of the sample are employed in sales and service occupations may reflect both the nature of the labour market (as these occupations are the significant areas of growth in the economy) and the relatively young age of the sample (15–34 years old). Many of the younger respondents are likely to be employed part-time while studying, and retail and hospitality jobs are very common for students looking to pick up casual work to supplement their income. At the same time, the prevalence of clerical and associate professional roles may reflect the relatively junior position of younger people newly embarking on their career paths.

Univariate analysis on ordinal and interval variables follows the same principles as for nominal variables, although the tools used are different. Because these variables contain categories that have an inherent ranking order, univariate tables present the categories in that order, rather than according to their respective frequencies. For example, the "Pathways to Sustainable Employment" survey asked participants their age when they started their first job. Responses were coded as an ordinal variable, according to Table 16.8.

The frequency distribution is presented below. Several notable differences distinguish this table from the earlier presentation of nominal variables. Firstly, the categories are presented in their logical ranked order, regardless of the frequency of the responses. The table would be confusing if the categories were presented according to their frequency distribution. The other significant difference is the addition of a

Table 16.8 Q109: Age at first job

Value	Code
< 14 years	1
14–16 years	2
17–19 years	3
20–22 years	4
23–25 years	5
26–28 years	6
29+ years	7

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cumulative percentage column. The cumulative percentage is simply a rolling sum of each of the percentages. This is useful for making quick assessments about the distribution of responses. For example, in Table 16.9 we can quickly see that 41,7 per cent of the respondents had their first job by the age of 16, while 77 per cent – more than three-quarters – held their first job by the time they were 19.

Table 16.9 Age at first job (N = 734)

	N	%	Cumulative %
< 14	20	2,7	2,7
14–16	286	39,0	41,7
17–19	259	35,3	77,0
20–22	125	17,0	94,0
23–25	37	5,0	99,0
26–28	5	0,7	99,7
29+	2	0,3	100,0
Total	734	100,0	

Another way to illustrate the shape of the distribution of any variable is through the use of graphs. A simple graph can often communicate very effectively at a glance information that might otherwise take a little more time to grasp. This is especially true if the reader is a visual thinker. Figure 16.4 below presents in a horizontal bar graph the data from Table 16.9. Presented visually, the shape of the distribution is immediately apparent: most respondents found their first job between the ages of 14 and 19.

The measure of central tendency – to find the "typical" response – used with ordinal variables is the *median*. The median is the middle value, that is the value at

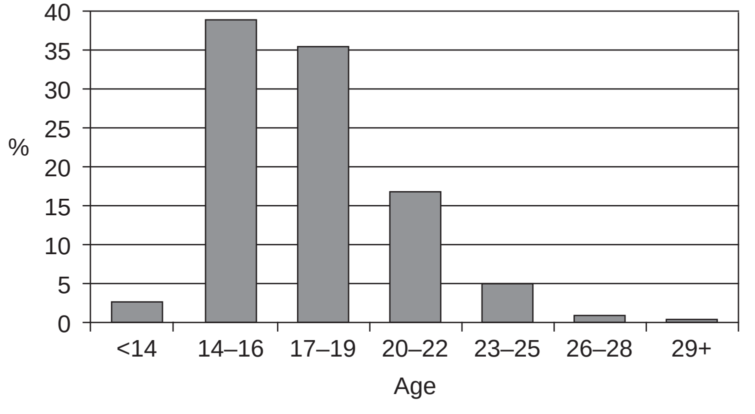

Figure 16.3 Age at first job (N = 734)

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which half the responses fall above and the other half fall below (Kreuger & Neuman 2006: 329). If there is an odd number of measurements, the median is the middle number on the scale; if there is an even number of measurements, it is the average of the two middle observations. The cumulative percentage column in the frequency distribution table makes the task of identifying the median easy, because the median category is the one in which the sample crosses the 50 per cent threshold, in this case, 17–19 years old. This can be said to be the typical age at which respondents got their first job.

Like the mode, however, the median cannot tell us *how* typical this response is. There may be a very large spread across all the categories, or the responses may group around the median, making it much more typical of the responses. To help describe the strength of the median, we use the range. If responses are distributed across the entire range of categories, then clearly the median will not accurately describe very many in the sample. The range is simply the distance between the lowest and highest values in the distribution. In our example, the median category is 3 (17–19 years old), but the range is from 1 (less than 14 years) to 7 (29+ years). However, as the table illustrates, there are very few responses in the higher categories, so the range actually can be misleading. One way to control for extreme outlying responses is to use the *decile* range, in which the top and bottom 10 per cent of the responses are dropped, and we focus only on the middle 80 per cent. Looking at the decile range for Table 16.9, we can say that, while the median category is 3, the decile range is 2–4. This gives a much clearer statement that most responses are fairly closely grouped around the median.

When dealing with scale variables, the measure of central tendency most commonly used is the mean, which is the sum of the measurements divided by the number of measurements. Thus it is influenced by both the magnitude of the individual measurements and by the number of measurements in the set. The mean specifies the centre of gravity or balance point of the distribution. Balance point is a useful way of speaking about the mean, because it introduces the notion of deviation, that is how far above or below the mean any observation is.

Age in years is a good example of a scale variable. Table 16.10 shows a frequency distribution adapted from the "Pathways to Sustainable Employment" survey (it has been altered for illustrative purposes). Note that for scale variables, as with ordinal variables, we include the cumulative percentage column.

To calculate the mean, we add together all the responses for each category, and then divide by the total responses. Thus, $(15 \times 29) + (16 \times 38) + (17 \times 40) + (18 \times 42)$ etc., ÷ 966. The resulting mean value – the *average* age of the respondents – is 24,1 years.

The mean is the most sophisticated measure of central tendency and is useful for interval and ratio levels of measurement and is the most widely used for statistical inference (Grinnell & Unrau 2005: 361). Because it can be pulled up or down by a few extreme cases, however, the mean is best used with relatively large sample sizes. With smaller samples the median may be a better descriptor.

As with the other levels of measurement, we want to know how well the mean describes the sample. In order to do that, we need some measure of dispersion; for scale variables we use *variance* and *standard deviation*. Variance is the average of the distances of the individual scores from the mean (Sarantakos 2005: 376) and

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Table 16.10 Age of respondents (N = 966)

	N	%	Cumulative %
15	29	3,0	3,0
16	38	3,9	6,9
17	40	4,1	11,1
18	42	4,3	15,4
19	47	4,9	20,3
20	52	5,4	25,7
21	60	6,2	31,9
22	66	6,8	38,7
23	70	7,2	46,0
24	80	8,3	54,2
25	66	6,8	61,1
26	63	6,5	67,6
27	60	6,2	73,8
28	51	5,3	79,1
29	47	4,9	84,0
30	37	3,8	87,8
31	34	3,5	91,3
32	34	3,5	94,8
33	28	2,9	97,7
34	22	2,3	100,0
Total	966	100,0	

standard deviation (as will be outlined below) indicates the average spread of the scores from the mean and therefore is usually reported along with the mean (Monette et al. 2008: 398). The variance and standard deviation are the most useful and widely employed of the measures of dispersion. However, in order to understand them, it is first necessary to understand the concept of *average deviation* (AD).

One way of looking at variability is to subtract the mean from each observation. Consider the data set in Table 16.11 to explain the principle of the variance of a variable.

Table 16.11 Marks of ten students in a theory test

65	50	61	73	55	61	80	72	66	67

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The mean value for the above data is 65. In calculating the deviation of each value from the mean, we find:

65 – 65 = 0;	50 – 65 = –15;	61 – 65 = –4;	73 – 65 = 8;	55 – 65 = –10;
61 – 65 = –4;	80 – 65 = 15;	72 – 65 = 7;	66 – 65 = 1;	67 – 65 = 2.

To find an "average deviation" we would want to add them, but since the amount of variation above the mean will be the same as the variation below it, 0 – 15 – 4 + 8 – 10 – 4 + 15 + 7 + 1 + 2 = 0.

The sum of the deviations from the mean is therefore not a useful measure, being equal to zero. A plan has to be made to get rid of the negative values in these deviations. Square the deviations, and all the negative signs will disappear! Add all the squared deviations and divide the sum by $n - 1$ where n is the sample size. The mean of the squared deviations is called the sample variance and is denoted by the symbol s^2. The formula used to calculate the variance is:

$$s^2 = \frac{\sum \left(x - \bar{x}\right)^2}{n - 1}$$

The variance of a variable can thus never be negative. The more variation there is between the sample values, the larger the average deviations will be, resulting in a larger sample variance.

STANDARD DEVIATION

As we have seen above, the variance is a statistic in squared units. For many purposes, however, it is desirable to use a measure of variation which is not in squared units but in the units of the original measurements themselves. So we have to cancel the squares out again. How do we do this? Having calculated the variance, we simply calculate its square root. Now the squares have been cancelled out. The value we obtain in this way is termed the standard deviation. The standard deviation is denoted by the symbol s, and the formula is thus:

$$s = \sqrt{\frac{\sum \left(x - \bar{x}\right)^2}{n - 1}}$$

The sample average and standard deviation are the most popular measures of central tendency and variation in statistics. The value of the variance and the standard deviation of a sample can be calculated directly by any calculator with scientific functions, and they are part and parcel of all statistical computer packages. For the example given above, the variance and standard deviation of the marks in the theory test are s^2 = 77,778 and s = 8,819.

STANDARD DEVIATION AND THE NORMAL CURVE

Methodologists emphasise that the most important aspect of measures of variability, or spread, is that the way in which measurements are spread in two or more different groups of data can be *compared* with one another. Variances of different sets

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SECTION
C

of measurements, for example, can be meaningfully compared: the greater the dispersion, the larger the variance. Thus it is difficult to interpret the variance for a single set of measurements without comparison. Fortunately, this is not the case with its square root, the standard deviation. In normal, or "bell-shaped" distributions (sometimes called a bell-shaped curve or simply a bell curve), approximately 68 per cent of the measurements fall within one standard deviation on either side of the mean (34 per cent within one standard deviation above the mean and another 34 per cent within one standard deviation below the mean), 95 per cent within two standard deviations from the mean, and more than 99 per cent within three standard deviations (with approximately 16 per cent more than one standard deviation above and another 16 per cent more than one standard deviation below the mean). This fact is useful, not only in interpreting what the standard deviation means, but also knowing this, we can get a sense of how far away from the mean the values in our data are falling by calculating the standard deviation (Rubin & Babbie 2005: 561). People rarely compute the standard deviations manually, however, as computers and calculators can do it in seconds.

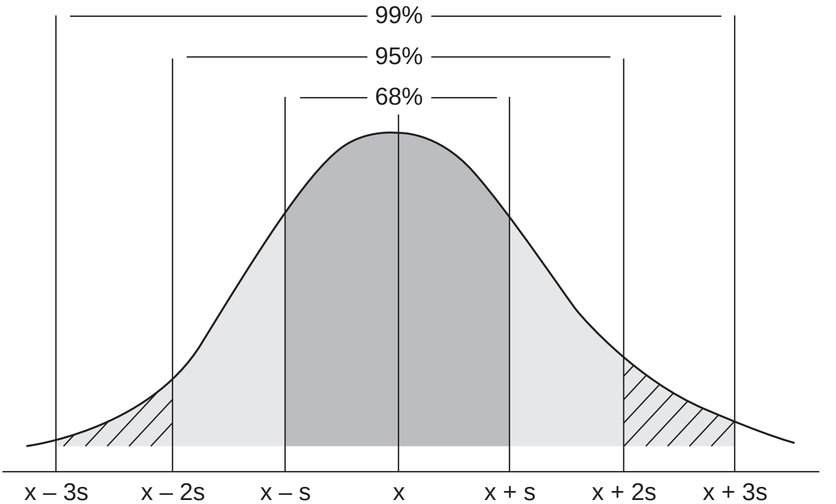

Figure 16.4 A normal curve

Thus, if we have the arithmetical mean and the standard deviation of a group of data, and we know that the data are more or less normally distributed in the original population; that is, in the form of the normal curve, we can interpret the meaning of the standard deviation without the aid of a comparable group. But first let us acquaint ourselves with this normal curve. According to Monette et al. (2008), the normal distribution is a symmetrical, unimodal distribution in which the mode, median and mean are identical. There is not one single normal distribution, however, there are many. What makes them all normal is that they are all symmetrical and unimodal, and have the three measures of central tendency at the same point.

Powers, Meenaghan and Toomey (1985: 245) tell us that in the mid-19th century a Belgian, Lambert Quételet, discovered that when the height of soldiers was meas-

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ured, there was a tendency for the scores to distribute themselves in a symmetrical bell-shaped curve when they were plotted on a graph. He noted that a few of the soldiers were very tall and a similar number were very short. But, for the most part, the majority of the soldiers tended to be grouped around the middle of the distribution. He repeated his experiment with other physical characteristics of the soldiers and discovered similar results. Today most characteristics of human beings, such as intelligence, kinds of attitude, abilities, etc., are considered to be normally distributed in any population. This is a "fact of life" which emerges sometimes in the smallest of groups of people. To return to the "age" frequencies illustrated in Table 16.10, the mean, median and mode for this distribution are all 24 years. The standard deviation is calculated at 4,95.

Monette et al. (2008: 404) express a strong preference for the normal curve, introducing it thus:

> The standard normal distribution is useful for comparing distributions with different means and standard deviations, and it helps us make precise statements about relative position in a distribution.

Let us now return to considering what it is that makes the standard deviation such a useful statistic; that is, the discovery of statisticians that in any group of data which is normally distributed (and we have seen that this is almost a "fact of life"), approximately 68 per cent of the measurements fall within one standard deviation on either side of the mean, 95 per cent within two standard deviations and more than 99 per cent within three standard deviations.

Every textbook on statistics contains a graph illustrating this. Readers may have noticed that the standard deviation scores are often marked z in the figure. This means that, for example, the original IQ scores of 52, 68, 84, 100, 116, 132 and 148 have been converted to standard deviations or z-scores of –3, –2, –1, 0, +1, +2 and +3. It has become a convention to use the symbol z to indicate that an original score has been converted to a standard deviation score. Original scores get converted into z-scores by subtracting the mean of all the scores in a group from each score, and then dividing the difference by the standard deviation. The formula is as follows:

$$z = \frac{x - \bar{x}}{s}$$

But what is the use of the z-score on its own? We may be working with a set of data completely different from IQ scores, in which case it means nothing to know that our data have z-scores of, say, 1 or 1,5, or 2,3.

This is where the use of the normal curve table comes in. Such tables of figures are available in printed booklets at most academic bookstores. Having determined the z-scores of our data, we can enter the normal curve table, by means of which we can interpret the meaning of our data in the same way as has been done with regard to the meaning of IQs. As this is a rather advanced procedure for the novice, it will have to be executed with the assistance of a statistician. Remember, these techniques work best when the samples are large enough (usually around 300 or more) and the attributes of the variables are normally distributed.

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SECTION
C

3.4 Step 12: Process and analyse data and interpret results: bivariate analysis

While much can be learned from examining the frequency distributions of single variables, the explanatory power of quantitative research comes from exploring the relationships *between* variables (Rubin & Babbie 2008: 493). This requires us to shift from univariate analysis to bivariate analysis. Whenever we classify subjects in relation to two separate variables simultaneously for the purposes of determining their degree of association, we create what is known as a cross-tabulation. This is a test to determine whether two independent variables are associated. Imagine that we conduct a survey to test the hypothesis that women are more committed than men to environmental issues. The hypothesis anticipates that there will be a relationship between gender and commitment to environmental issues. We could construct a survey instrument that asks a variety of questions related to opinions, attitudes and behaviours, from which we could construct a single variable, a four-point "environmental commitment" scale. Bivariate analysis would then involve testing the relationship between that variable and participants' gender.

To do so, we must identify the nature of the relationship: are the variables merely associated with each other, or is one variable likely to be acting on the other – in other words, is there an independent variable which acts on a dependent variable? If the changes in one variable result in changes in a second variable (e.g. education levels and income), then the variable which occurs earlier and creates the effect is the independent variable, and the one which demonstrates the effect is the dependent variable.

This raises the issue of causality. At what point can we say x causes y? Variables often can be but not necessarily associated in a causal relationship. For instance, because more patients die who are admitted to hospital intensive care units than those admitted to general wards, we can say that there is an association between rates of death in hospitals and patients' admission to intensive care units. However, there is no causal relationship: admission to an ICU and death in a hospital are both common responses to a pre-existing or *antecedent* variable, in this case the serious condition of the patient's health. In fact, proving causal relationships in the social sciences is notoriously difficult: we inhabit an infinitely complex social world, and most of the social phenomena of interest to us are influenced by constellations of factors rather than single causes. So, when we talk about causal relationships, and the nature of the relationship between independent and dependent variables, this does not mean that we assume a *direct* causal link between the two, nor necessarily that the variable we have identified as the independent one is the *only* factor influencing the dependent variable.

If we return to our hypothetical example about the relationship between gender and commitment to environmental issues, we can identify gender as the independent variable and environmental commitment as the dependent variable, because gender is the pre-existing variable. That is, while it may be possible that one's gender influences one's environmental commitment (which is what is tested here), it is nonsensical to imagine that one's commitments can effect changes in one's gender! Having determined the nature of the relationship between our selected variables we can begin to construct a contingency table. There are well-established conventions that govern how such tables are set out: one is to place the independent vari-

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able in columns (with the category labels running across the top of the table) and the dependent variable in rows. Also, as with frequency distribution tables, the categories of ordinal or interval variables should be presented in their rank order. The frequencies would be laid out as in Table 16.12.

Table 16.12 Bivariate relationship: commitment to environmental issues and gender

	Gender	
Commitment to environmental issues	**Female**	**Male**
Very high	65	20
High	108	40
Moderate	52	95
Low	18	65
Very low	7	30
Total	**250**	**250**

Frequency counts can be difficult to compare across multiple categories, however. It is easier to analyse the relative percentages. Because we want to determine differences in the commitment scores according to gender, we present the percentages of the distribution of the columns – that is the proportion of female and male participants placed in each of the commitment categories. These percentages are calculated by dividing the cell frequencies by the total in each column, expressed as a percentage. Tables that present percentages also should include the total frequencies in the bottom cells (called *column marginals*) as this tells the reader about the total size of the sample.

Table 16.13 Bivariate relationship: commitment to environmental issues and gender (percentage distribution)

	Gender	
Commitment to environmental issues	**Female**	**Male**
Very high	26%	8%
High	43%	16%
Moderate	21%	38%
Low	7%	26%
Very low	3%	12%
Total	250 (100%)	250 (100%)

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Setting out the percentages makes it easy to compare the differences in the index scores of the females and males in the sample. In doing so, we not only see the distribution of scores for males and females listed separately, but we can also compare differences in responses for each of the categories of the dependent variable. We can see at a glance that the largest category of female scores is in the "high" category, the highest for male scores is in the "moderate" category, and that in each row there is a sizable percentage difference between female and male scores. These differences can also be illustrated in graphical form (Figure 16.6). If the differences between males and females in each category were only a few per cent we might say that the relationship was a weak one. In our case, however, the percentage difference ranges from 9 per cent (in "very low") to 27 per cent ("high"). This would suggest, at a glance, that for our sample there is a notable relationship between gender and commitment to environmental issues – one that would be worth further exploration.

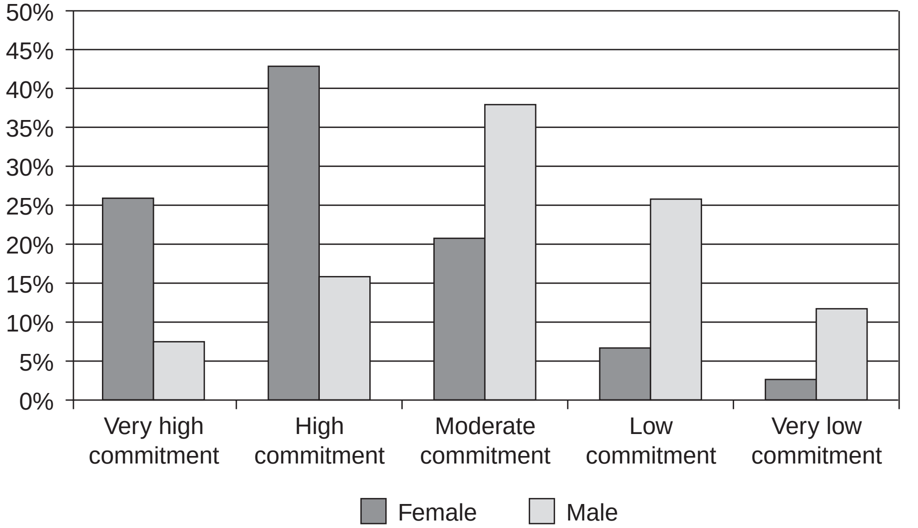

Figure 16.5 Clustered bar chart of female and male environmental commitment scores (N = 500)

Cross-tabulation, as we saw above, is a technique for displaying the joint-frequency distributions for two variables. This technique is best suited for observing the association between variables when at least one of them is nominal – that is a variable whose values are categories without a natural rank order or mathematical values. Many of the variables of interest to professionals in the caring professions are of this nature. However, many variables measured at the ordinal and interval levels of measurement are also important in the task of establishing and quantifying the relationships which we observe in the world around us. When working with ordinal or interval level variables, we are able to shift the focus of our analysis away from association towards correlation.

According to Craft (1985), correlation involves both a relationship and the concept of quantification of the *strength* or *degree* of relationship. Such strength or

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degree of relation or relationship between two variables can be measured and expressed through any one or more of the available correlation coefficients. The primary factor determining which is the appropriate one to use is the way the two variables were *measured*. In addition, correlation involves *direction;* that is, a correlation is not only weak or strong, but can occur in a positive or negative direction. A positive relationship is denoted when a change in the independent variable produces a change *in the same direction* in the dependent variable. A simple illustration of a positive correlation is that when the temperature in summer goes up, the quantities of cold mineral water consumed by people also go up; if the temperature drops in winter, the quantities of cold mineral water consumed also drop. A negative correlation occurs when the change in the dependent variable is in the opposite direction to the change in the independent variable. For example, as the temperature in summer goes up, the consumption of hot soup drops; if the temperature in winter drops, the consumption of hot soup increases or goes up.

These two dimensions or aspects of correlation (strength and direction) can best be illustrated by the use of scattergrams.

3.4.1 The scattergram

A scattergram is a diagram that shows the relationship between two variables by plotting the responses of each individual for both variables (Moore 1997: 303). The variables must be at ordinal or interval levels of measurement, and should have multiple categories. The scattergram is constructed by placing one variable along the abscissa (the horizontal or x-axis) and the other along the ordinate (the vertical or y-axis). If one of the variables is considered to be the "independent" variable, this variable is placed along the abscissa. The next step involves constructing a distribution of *pairs of scores*. It is then that the values for each pair are plotted in the scattergram (Craft 1985: 77). In real life the dots almost never all lie in a straight line. They are *scattered.* If a relationship exists between the two variables involved, the dots will lie scattered more or less around a straight line. The regression line is that line fitted through the dots in such a way that the vertical difference between each dot and the corresponding point on the line is a minimum. When there is a perfect relationship, we can predict with complete accuracy (100% of the time) the corresponding value of Y, given a specified value of X.

3.5 Multivariate analysis

To extend our earlier example about the association between gender and environmental commitment: What if gender was not the only influence over people's commitment to environmental issues, and there were additional variables exerting an effect on the results? Perhaps respondents of different ages have different commitments to environmental issues, and the analysis of gender does not tell the whole story. If the sample for our survey comprised adult males and females, aged 18–70, we could test the interaction between gender and environmental commitment, and control for age. This will require multivariate analysis, because the aim is now to test the interaction of three variables.

This form of multivariate analysis is referred to as the elaboration model. One or more control variables are introduced to elaborate on the initial bivariate relation-

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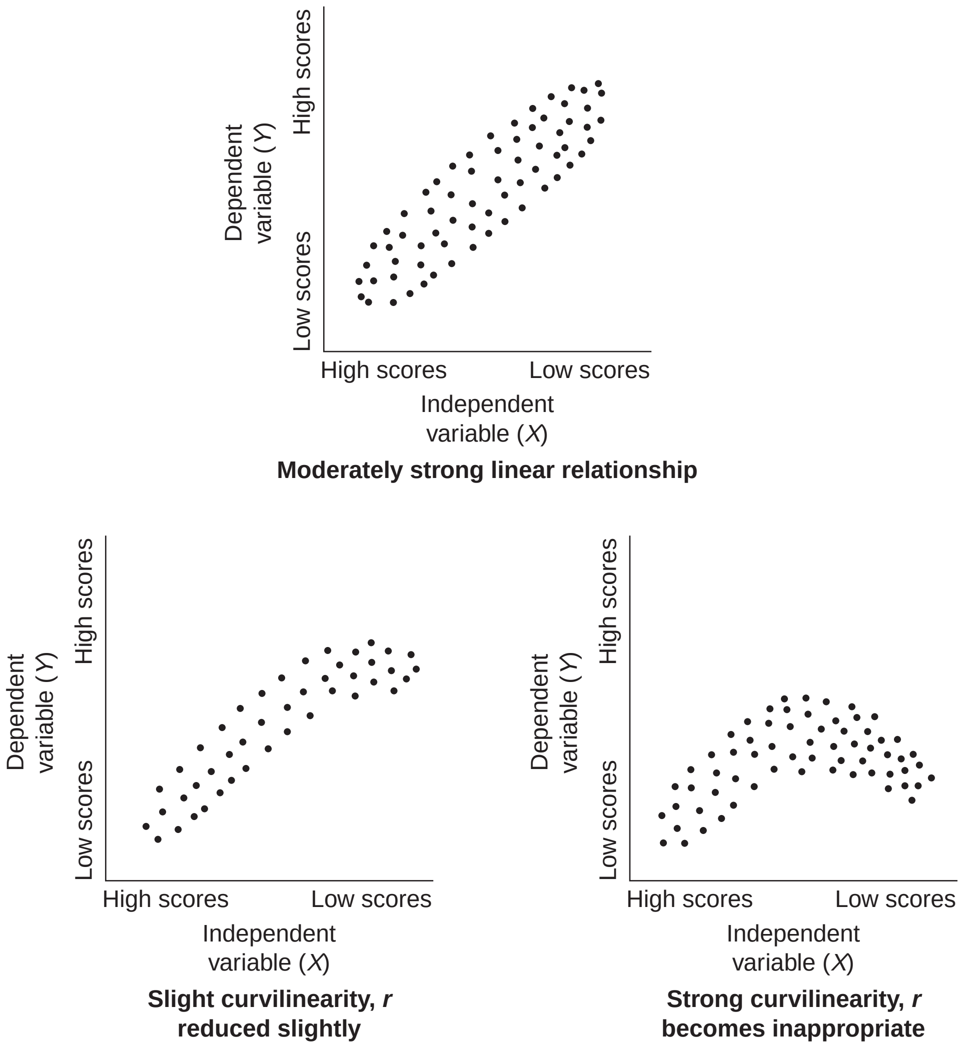

Figure 16.6 Three typical scattergrams

Source: Monette, Sullivan & DeJong (2008: 402)

ship. That relationship is referred to in the elaboration model as the zero-order relationship. If a control variable is introduced which explains away the zero-order relationship, that relationship is explained as spurious (Rubin & Babbie 2008: 240–241). A spurious relationship is one that appears to hold true for a zero-order relationship (such as the earlier example of admissions to intensive care and deaths in hospital), until explained by the introduction of a control variable (the serious condition of the patient on admission). However, there are times when a control variable does not explain away the zero-order relationship. The zero-order relationship is said to be *replicated* when the results remain the same even when controlled for other variables. Replication of results can strengthen confidence that

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the zero-order relationship is a robust one. A further possibility in the elaboration model is *specification*, when the zero-order relationship is demonstrated to be strong in some categories of the control variable, and weak – or non-existent – in others. In such circumstances, the control variable is said to specify the particular categories of people for whom the zero-order relationship holds (De Vaus 2001).

The beginning step in multivariate analysis is the same as when testing bivariate relationships, by identifying the nature of the relationships. Again, the environmental commitment score is the dependent variable and gender is the independent variable, while age will be a *control* variable. Respondents are grouped into subsets (in this case age ranges 18–29, 30–39, 40–49, 50–59, 60–69, 70+), and then the relationship between environmental commitment and gender is tested within each of these age cohorts. Whereas contingency tables were constructed for bivariate analysis, when performing multivariate analysis we use *partial* tables, because within them we are testing partial relationships (Monette et al. 2008: 383). When one control variable is introduced, the partial relationship is called a first-order partial relationship. If a second control variable is introduced, that relationship would be a second-order partial relationship, and so on. The partial tables (of our hypothetical sample) for testing commitment by gender, controlled for age, are illustrated in Table 16.14. Again, we use percentages and list the total number of responses for each partial table in the column marginals. However, to simplify the table, the "very high" and "high" commitment score categories have been collapsed, as have the "very low" and "low" categories.

Although partial tables are a little more complicated, they are read in the same way as contingency tables by examining the changes within each category of the independent variable (i.e. assessing the changes in scores among women across all age groups, and then among men) and then comparing the relative percentages between women and men across the categories within each age group. The results for the male respondents present a clearer picture, so let us begin with them. In the contingency table (Table 16.13) we determined that only a small proportion of males in the sample returned a "very high" commitment score. However, in the partial tables it is clear that two-thirds of males in the youngest age category returned a "high" or "very high" score. The proportion of males in the "high" commitment category declines in every subsequent age cohort: only about 3 per cent of males aged 50–59 returned a "high" commitment score, and no males in the oldest cohort did so. The exact opposite is true in the "low" commitment category: about 12 per cent of males in the youngest cohort demonstrated "low" commitment, while that proportion grows in each subsequent cohort. The vast majority of the oldest males in the sample demonstrate "low" commitment to environmental issues.

Females in our hypothetical sample demonstrate a more complex pattern of scores. Overall, however, it is clear that women in the middle three cohorts returned higher scores than those in the youngest and oldest cohorts; and the women in the youngest cohort – aged 18–29 – returned the lowest commitment scores of all the women in the sample. In this example, it is demonstrated that there is a clear relationship between gender and commitment to environmental issues, but that relationship is complicated by age, in that age appears to play a different role for each gender; young adult men in the sample are more committed than older males to environmental issues, and increasingly less so in the older age

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SECTION C

Table 16.14 Partial tables: environmental commitment, gender and age (N = 500)

Age ranges	"Environmental commitment" scale score	Gender	
18–29 years		**Female**	**Male**
	High commitment Moderate commitment Low commitment Total	35,9% 41,0% 23,1% 78 (100,0%)	65,7% 22,4% 11,9% 67 (100,0%)
30–39 years		**Female**	**Male**
	High commitment Moderate commitment Low commitment Total	78,4% 21,6% 0,0% 37 (100,0%)	16,7% 58,3% 25,0% 72 (100,0%)
40–49 years		**Female**	**Male**
	High commitment Moderate commitment Low commitment Total	90,9% 5,5% 3,6% 55 (100,0%)	4,9% 41,0% 54,1% 61 (100,0%)
50–59 years		**Female**	**Male**
	High commitment Moderate commitment Low commitment Total	87,5% 7,1% 5,4% 56 (100,0%)	2,9% 29,4% 67,6% 34 (100,0%)
60–69 years		**Female**	**Male**
	High commitment Moderate commitment Low commitment Total	70,8% 20,8% 8,3% 24 (100,0%)	0,0% 18,8% 81,3% 16 (100,0%)

groups, while older women in the sample, especially those in middle age, are considerably more committed than younger women to environmental issues.

Our example has demonstrated a form of specification – that is it has allowed us to detail the ways that gender influences environmental commitment within specific age groups in the sample. Had there been no notable differences between females and males across the various commitment scores within each cohort, we would have been able to conclude that age explained the apparent relationship between gender and environmental commitment, in which case that apparent relationship would have been described as a spurious relationship. Instead, we can see that the

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strength of the relationship between gender and environmental commitment is different for different age cohorts.

So far we have presented the underlying logic involved in bivariate and multivariate analysis, and some of the techniques involved to identify whether an association exists between variables. The next step in quantitative analysis is to quantify those associations. This is done through a variety of statistical techniques outlined briefly in the next section.

3.5.1 Measures of association

Measures of association condense information about the strength and direction of a bivariate relationship into a single number (Kreuger & Neuman 2006: 342). More specifically, Sarantakos (2005: 377) explains, correlation is the method that produces this "single number" by examining three aspects of the relationship:

- The *presence* or absence of a correlation (Does a relationship between two variables really exist, or is it merely the result of chance?)
- The *strength* of the correlation (If a relationship exists, how strong or weak is it?)
- In the case of ordinal or interval variables, the *direction* of the correlation (If such a relationship does exist, in what direction does it lie – positive or negative?)

In the case of two ordinal or interval level variables, Kreuger and Neuman (2006) explain that the statistical relationships are based on two fundamental principles in statistics, namely *covariation* and *independence*. Covariation means that "things go together or are associated" (Kreuger & Neuman 2006: 334), whereas independence is the opposite of covariation – it means that there is no association or relationship between variables. The principle of co-variation applies whenever the variables under consideration are numerical in nature, such as annual income and years of education, and a quantitative change in one variable is accompanied systematically by a quantitative change in the other. The effect is that the two variables move or vary together in a more or less orderly fashion, regardless of the direction of the relationship. A typical graphic display for two numerical variables is a scatterplot, which can then be followed up by calculating the co-variance and correlation coefficient between the two variables.

A scattergram would be a cumbersome and awkward method of presenting the paired scores of a large number of individuals. Also, it is merely a descriptive technique. A correlation coefficient therefore provides a "shorthand" numerical representation or measure for indicating both the strength and the direction of a linear bivariate relationship. This measure can be viewed as a continuum ranging from +1,0 at one extreme (denoting a positive relationship) to –1,0 at the other extreme (denoting a negative relationship), with 0,0 at the midpoint. The closer the numerical value of the correlation coefficient is to either extreme (+1,0 or –1,0), the closer the strength of the relationship between the two variables is to perfection (positive or negative). For example, a correlation coefficient of –0,89 is closer to a perfect relationship than coefficients of either –0,50 or +0,50. The closer the coefficient is to the middle of the continuum, the weaker the relationship is between the two variables. A correlation coefficient of 0,0 indicates no relationship at all.

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A variety of correlational procedures can be used, depending on the levels of measurement of the two variables being correlated. However, they are all interpreted in similar ways: the coefficient derived from any of the various bivariate correlation procedures always falls somewhere along the continuum from +1,0 to –1,0. As a rule, coefficients between 0 and ±0,3 are usually described as weak associations; results between ±0,35 and ±0,59 as moderate; and between ±0,6 and ±1 as strong, or very strong.

3.5.2 Tests of statistical significance

At this point it is useful to remember the purpose of quantitative approaches to research. Methods such as surveys, especially when administered to participants selected via probability sampling techniques, are powerful tools for generalising to large populations. The goal of our research activities is not usually confined to explaining phenomena in terms of our sample only; rather, we carefully select the sample in ways that make them representative of a wider population of people. Then, if associations between variables are found to be notably strong – or notably weak – we may be able to make statements about the whole of the population (such as "younger men in a given province or state are more committed to environmental issues than older men"). The ability to generalise to larger populations is of great importance when we consider research into particular social service interventions, for instance – far more powerful than declaring that a given approach to reduce youth offending was successful in 70 per cent of a few cases would be to make the claim that such an approach is likely to be successful in 70 per cent of cases where the specified conditions prevailed in the whole population.

The ability to shift our theorising from the sample – that is the survey participants – to the wider population from which the sample was drawn relies on two important factors: the first is robust sampling practices, as described in Chapter 14; the second is statistical tests of significance. These tests have been developed to ascertain whether the results obtained by data analysis are statistically significant; that is, whether they are meaningful and not merely the result of chance. This is important, because it is possible to produce, merely by chance, results in the sample which are indeed different from what occurs in the population. Tests of significance are executed on what is called a "level of significance". In theory these levels can be arbitrarily chosen, but in practice conventions have developed which prescribe that the tests are usually performed on either the 0,05 or the 0,01 level of significance. Basically this means, in the case of the 0,05 level of significance, that there is a 95 per cent chance that the results are due to the "treatment" or influence of an independent variable, or combination of independent variables, and not to chance. On the 0,01 level of significance, there is a 99 per cent chance that the results are not due to chance – a rather powerful assertion. To state this another way: the 95 per cent significance level suggests that, if using the same probability sampling techniques we were to draw 100 different samples from the population, we could assume that 95 of those 100 samples would return the same results as the sample which produced the statistic – thus, we can be confident that our result is unlikely to have been produced merely by chance. The convention in the social sciences is that the 95 per cent confidence level is the *lowest* acceptable result: when the tests

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of significance produce a result lower than 95 per cent (or 0,05), then we must assume that the result could have been produced as a result of chance, due to sampling error.

It is very important to note that the final step in all statistical analysis is significance tests or statistical inference – to allow us to infer results from the sample to the whole population. The main aim of statistical data analysis is not so much about organising the data into tables, drawing graphs and calculating coefficients; it is more about making probability statements concerning the populations from which the samples were drawn. Significance tests lead to statements like the following: "We can be 95 per cent sure that the average income of men in South Africa is higher than that of women"; "We can be 99 per cent sure that there is a statistically significant association between number of hours of study and exam marks"; "According to this sample we cannot say that the proportion of people who wants the return of the death penalty is significantly greater than the proportion that does not want it back", etc.

Measures of association and tests of significance are intended to be read together. It is possible for an association between two given variables to indicate a strong relationship, but for the significance to be very low, thus indicating that the result is likely due to sampling error. Conversely, the association between variables may indicate a weak relationship, which may test significant – that is it is likely that there is only a weak relationship between those variables in the population as a whole. Ideally, of course, we would like to see tests of association indicate strong relationships with high levels of statistical significance – it makes the job of interpreting and explaining our results so much simpler!

There are, of course, many different significance tests, both in the univariate, bivariate and multivariate cases. Detailed explanations of these tests are found in statistics textbooks. Some well-known tests are Student's t-test for testing hypotheses about mean values; analysis of variance; tests for determining the significance of regression coefficients; and correlation coefficients. It is not the aim of this chapter to present all the formulae for calculating these statistics: statistics texts and software applications like SPSS can do all that. What is especially important is that readers get a feel for the logic of the process of data analysis, and have a clear understanding of what to look for in the data and why.

SUMMARY

Initially this chapter describes the levels of measurement (nominal, ordinal, interval and ratio), and subsequently quantitative analysis, including descriptive methods, techniques of association, searching for causation and methods of inference utilising various types of test of significance. The section on descriptive methods of analysis focuses on data preparation and data entry, and then on univariate, bivariate and multivariate analysis.

Discussing univariate analysis necessitated a description of frequency distributions – the function of central tendencies – of the standard deviation and of the normal curve.

We point out that bivariate analysis increases the explanatory power of quantitative research; for example, changes in one variable result in changes in a second

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variable (e.g. education levels and income). The variable which occurs earlier and creates the effect is the independent variable, and the one which demonstrates the effect is the dependent variable. The scattergram is described as one of the techniques of presenting such a bivariate relationship.

Our discussion of multivariate analysis states that multivariate analysis further elaborates the explanatory power of quantitative research; therefore it is sometimes called the elaboration model. One or more control variables are introduced to elaborate on the initial bivariate relationship. An example describing a relationship between environmental commitment, gender and age is presented.

Moving to a discussion of measures of association, this chapter states that these measures condense information about the strength and direction of a bivariate relationship into a single number. Correlation is the method that produces this "single number" by examining three aspects of the relationship, namely the presence (or absence) of a correlation, the strength of the correlation, and the direction of the correlation.

Tests of statistical significance have been developed to ascertain whether the results of data analysis are statistically significant; that is, whether they are meaningful and not merely the result of chance. The basic question is whether characteristics of researchers' sample group/s can be ascribed to the wider population from which they selected their sample group/s.

Self-evaluation and group discussion

All the data for your quantitative study have now been collected.

- With the help of your statistician, plan the statistical analysis of these data.
- Conduct the statistical analysis of your data.
- Present the analysis to your study group.

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17

H STRYDOM & CSL DELPORT

Writing the research report

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with the definitions of some relevant concepts
- distinguish between the goals and objectives of a research report
- evaluate the various kinds of report
- study the requirements of a research report
- recognise the various elements of a research report
- identify the sections that a research report should contain
- comply with the technical requirements for a research report.

1. INTRODUCTION

Committing the collected data to paper and communicating the findings to others (McBurney 2001: 75) are important parts of any research project and can be described as the face of the investigation that should reflect the research process and outcomes accurately, adequately and effectively (Sarantakos 2000: 443). If the execution of a project was warranted in the first place, it should also be adequately reported. Any scientific research report, academic assignment, dissertation or thesis has to follow certain accepted criteria and research principles (Struwig & Stead 2001: 254).

Without the completed report and the proper communication of the efforts devoted to the various procedures used in the research, there is no indication that any research has been done and nobody can benefit from it if those findings are withheld (Babbie 2007: 503; Monette, Sullivan & DeJong 2005: 469). Without published research reports, the claim of a scientific knowledge base for a particular subject such as social work or nursing science might be difficult to substantiate (Grinnell

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2005: 432). However, writing the report is possibly the most difficult part of any project. A variety of issues have to be addressed in the report, and a balance has to be maintained between the various components of the investigation.

The report can also be viewed as the final product of the long research process that has now been completed, and should tell the story of how the process was executed supported by the evidence from the data and the forthcoming knowledge claims (Henning 2005: 153). Thus we see that three products result from three related though distinct processes:

- The process of selecting a broad problem or theme, which resulted in the initial identification of the problem by the writing out of a tentative formulation such as: "I want to do research about the effects of the birth of a physically handicapped child on the functioning of the child's family"
- The process of selecting a unit of analysis, goals and objectives, and suitable research approach; that is, quantitative or qualitative or a mixed methods approach, and often also research design and data-collection methods, which resulted in the writing out of the formal problem formulation, usually consisting of a few paragraphs
- The process of integrating these initial processes into a detailed research proposal. The completion of the full cycle of the comprehensive research process should then culminate in the final report.

2. PHASE 5: DATA ANALYSIS, INTERPRETATION AND PRESENTATION

2.1 Step 13: Write the report

2.1.1 Definition of concepts

Babbie (2007: 503) states that a research report is the manner in which a completed study is communicated to other people, whether they are colleagues at work or a worldwide audience. The specific data and ideas should be communicated in a clear, balanced, precise, fair and sufficiently detailed manner in order to allow an informed evaluation by others and to be seen as a contribution towards the general body of scientific knowledge (DePoy & Gilson 2008: 202; Unrau, Gabor & Grinnell 2007: 410). A research report can thus be defined as a written document which is the end result of a series of procedures undertaken to reveal information. Neuman (2006: 491) adds that a research report may also be an oral presentation based on a written document that communicates the methods and findings of a research project to others.

Mouton (2001: 58) says that the report is a scientific document and has to conform to the style and format required by academic institutions. A report should be clearly written, without unnecessary details and empty phrases. McBurney (2001: 76) adds that scientific writing aims to persuade as well as to inform. However, the writing of a report must be preceded by certain activities. In the case of the research report, these activities are termed *research* or *investigation*. A report is a mode of communication, since a written message is conveyed from the author to the readers.

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The research report is the essence of an investigation in which the written results, as they relate to the conclusions, recommendations and evaluation of the collected material, are presented to the reading public. The research report may range from a thesis or dissertation submitted to a university with a view to obtaining a degree to an ordinary report on a limited local investigation. Research can form part of the normal daily routine of a social worker with one or two clients, or it may be intended for publication in a professional journal.

2.1.2 Goals and objectives of a research report

Obviously the overall goal of a research report is to convey the knowledge and findings of the research project in an intelligible and scientifically based manner, as effectively and economically as possible, to the audience. The specific objectives of a research report can be described as follows:

- To pinpoint the essence of the project and to wind up the investigation
- To broaden our knowledge and understanding of the world in which we live, in other words with an exploratory aim
- To convey this knowledge effectively in legible and intelligible language to the reading public, in other words with a descriptive purpose
- To submit a written report for evaluation by colleagues and examiners
- To replicate a certain investigation so that translatability and verifiability may be enhanced, thus contributing to a scientific factual basis for the profession with an explanatory aim pointing to causal relationships among variables

It can thus be concluded that in essence the objectives of a research project can either be exploratory, descriptive or explanatory in nature (Rubin & Babbie 2005: 663). The goals of the quantitative or qualitative report such as the communication of the scientific research process followed, obtaining the data and results thereof remain the same in spite of the distinctive character of the qualitative report. However, Babbie (2007: 503), Berg (2007: 344), Esterberg (2002: 206), Monette et al. (2002: 484) and Neuman (2006: 491) emphasise that the content and format of the report, and how the findings are presented, depend on the audience with whom one is communicating, whether it is colleagues, respondents, policy makers, academics or the general public.

2.1.3 Kinds of report

Various kinds of report can be envisaged. The following discussion focuses on some examples of research reports.

RESEARCH NOTES

For a short research note for publication in an academic or technical journal, Babbie (2007: 503) suggests a report from one to five pages long and typed in double-line spacing. In a short amount of space the field cannot be described in detail, so methodological notes must be abbreviated as well (Babbie & Mouton 2001: 564). Such a report should be concise and direct, basically telling the reader why the findings justify a brief note and then briefly informing them about the findings.

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REPORTS TO SPONSORS

Often researchers must prepare reports for the sponsors of their research and these can vary greatly in length. Again, the audience should be kept in mind and their reasons for sponsoring the project in the first place. According to Babbie (2007: 504), it is bad politics and ill mannered to bore sponsors with research findings that have no interest or value to them. Business people especially are interested in the essence of the findings in a brief form, and not in unnecessary details of the study. The researcher involved in the study may think that all the findings and details are of importance, while for the reader this may not be so.

WORKING PAPERS

A working paper or monograph can be regarded as a work in progress and may assist the researcher in compiling a better final product from the tentative presentation with a request for comments. In a large and complex project one may find comments on the analysis and the interpretation of the data useful. The length of a working paper may vary, according to whether the total research findings are reported on or whether only a portion of them are included. Seeing that it is not a final report, the researcher can feel free to present tentative interpretations and ask for evaluation of them by the panel.

PROFESSIONAL PAPERS

Many research projects result in professional papers being delivered at national and international conferences. Often they serve the same purpose as working papers where findings and ideas of interest can be presented to colleagues for their comments. The length of professional papers varies depending on the organisation and the prescriptions of the particular association but should not be longer than what can be presented in 20 minutes, which is normally the time allowed for such a presentation. To be able to do this, the paper should not be more than six to eight pages in length in 1,5 line spacing.

Sometimes the author is given the option of poster presentation instead of an oral presentation. Oral presentations are usually regarded as being of a higher standing than posters. On the other hand, more people can probably view posters than listen to oral presentations, especially in the case of large conferences where many sessions take place concurrently. Again, it is better to say too little than too much and not to bore delegates at these conferences with too much detail. If they want to know more on the topic, they should be encouraged to ask questions afterwards or even speak to the presenter on an individual basis. This is indeed the procedure at most major events of this kind.

RESEARCH MANUSCRIPTS

The most popular research report is definitely the research article published in an applicable, accredited academic journal (Rubin & Babbie 2005: 662). These journals are often referred to as refereed journals (Alston & Bowles 2003: 286). A research article is most widely read or at least taken notice of by the professionals in the particular field because journal articles become part of an information network and are easily accessible (Grinnell & Unrau 2008: 419).

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Many professionals subscribe to some of the journals in their field and they are available from academic libraries at universities. It often becomes too expensive for libraries to subscribe to all available journals in every field, but the inter-library loan facility may be used. The length of articles varies according to the specific prescriptions of journals, but as a rough guide a maximum of 25 pages including the bibliography with 1,5 line spacing can be regarded as the average. Some journals have a restriction on the number of words, such as 5 000–8 000 words. A manuscript must always be accompanied by a short abstract.

PROFESSIONAL QUALIFICATIONS

In this category, the focus is on publications for a higher degree such as Master's or doctoral degrees. Seeing that these dissertations or theses are done with a view to receiving a higher degree in a subject, it is general practice that they be evaluated by peers from another university and even another country for quality control purposes. In the past, the content of these publications was mostly known only to the particular evaluators of the dissertation or thesis and a small number of local students and academics of a particular university. These publications generally just gather dust on a library shelf.

When doing the long format, much repetition of data can occur because many students feel they need to cater for the reader who has never read anything on the topic. They then start from the beginning by reinventing the wheel instead of contributing to the topic by adding to what has already been said. Some reports extend to 600 and more pages. This is too long, and reports of this nature can discourage people from reading them. Nowadays, the focus and even sometimes the requirements for publications for degrees are on preparing at least one or more manuscripts from the data for submission to an accredited journal. In this manner the findings are widely disseminated to many readers of the topic. However, some students feel once they have completed their studies that they do not want to be bothered by reworking and shortening the study in article format afterwards.

As a matter of fact, some universities require or at least encourage their students to plan and execute the research report in article format, which is also known as the short format. In this way a student can submit a manuscript to a journal even before the examination process has been concluded, which means that more articles get published and in a shorter turnaround time. This empowers students to have a publication to their name, and is regarded as highly desirable. Students' manuscripts are usually submitted under their own and their supervisor's name, giving them the opportunity of publishing under the auspices of, perhaps, a recognised academic.

A TEXTBOOK

A book represents the most prestigious and most detailed form of research report and is widely accessible to many readers (Rubin & Babbie 2005: 662). A textbook can be bought or ordered from most academic bookshops and usually covers a wide area of expertise on the topic. For instance, most research texts will cover the entire field of research with a variety of topics on which the emphasis is being placed, whether they are for graduate and beginner students, or whether they focus on postgraduate students and academics in the field.

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Publishing research findings as a book lends greater substance and worth to the data and enables a person to read widely on a specific topic in one text. Although some colleagues may provide comments on the ideas in the book, others might accept the findings uncritically (Babbie 2007: 504). It is not advisable to focus too much on only one author's opinion of a specific topic, however. A prospective researcher should consult widely and read more than one opinion on a topic before accepting it as the final say.

2.1.4 Requirements of a research report

Some of the most important requirements of an effective research report are indicated as follows by Leedy and Ormrod (2005: 285) as well as Neuman (2006: 492):

- *Organisation.* This is one key to a good research report, whether it is the short or long format. The organisation of the report is outlined by the proper use of chapters, headings and subheadings.
- *Accuracy.* This implies that facts are presented in a pure manner without any form of distortion. All relevant information should be provided, and the author must ensure that it is accurate.
- *Consistency.* This means that, at least within an organisation, a certain degree of conformity and firmness of principle should exist with regard to technical issues, grammar and style. The style which an individual selects must be maintained at all costs.
- *Clarity and communication.* This means that the report must be easily intelligible and logically consistent, and should not provoke any kind of misunderstanding in the process of communicating the methods and findings to others.
- *Conventionality.* This is used in the sense that conventional and characteristic usage, with specific reference to spelling and choice of words, must be maintained. The requirements of the organisation concerned must also be considered.
- *Conciseness*. This implies that the message should be conveyed succinctly and that a minimum of words should be used to convey the message.
- *Relevance.* A research report should be relevant to the subject, the purpose and the reading public it seeks to address.
- *Objectivity*. This is the basis of all the requirements stated above. Authors must, therefore, maintain the essential distance between themselves and their material in the report in order to avoid emphasising their own preferences and aversions.

2.1.5 Elements of a research report

Various elements of a research report can be distinguished and these are described below:

THE AUTHORS THEMSELVES

Surely the author is the most important element of the final product and is involved throughout the total process. The author should not merely absorb the information, but also digest it, fully consider it and achieve a meaningful version of it. The report thus reflects the critical thought invested in the subject by the author.

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Self-confidence is certainly one of the fundamentals of research in order for researchers to arrive at their own conclusions and recommendations. The correct personal attitude on the part of the researcher is crucial to commencing to write the report. This includes a clear awareness and consideration of the researcher's own prejudices, limitations and potentialities.

Almost everyone struggles with commencing the report. Getting started is a common problem because it is not simply a question of ability or of knowledge about the subject. However, a start must be made and the sooner the better. As soon as something has been jotted down roughly or some free typing on the computer has been done, it can be improved upon. When the researcher is actually writing, rather than thinking about writing, the mind becomes active and closely engaged with the topic by struggling to capture ideas in words and sentences.

Authors must initially contemplate carefully the image and the purpose that they wish to convey, and the relationship between themselves and the reading public they mean to reach. Authors should consider that the first impression a report makes on its readers is important, and that they should thus start off on a high note. Authors should view their style as a form of face-to-face contact with their readers in which a certain relationship emerges, such as student toward master, expert toward expert, or friend toward friend.

THE READING PUBLIC

The audience is obviously an important element of any research report and this aspect should be considered carefully. The variety of audiences should be kept in mind, whether they are scientists or the general public, and whether they have different degrees of training, experience and motivation to read the report. Bloom, Fischer and Orme (2003: 30–31) distinguish among reports to the agency, reports to the community and reports to the profession. Even if the reading public consists of social workers only (or any of the other caring professions), there will be a considerable difference between the various readers, who will approach the report with their own purpose and motives in mind due to their specific training and viewpoints. For some audiences a summarised version of the findings is enough, while for others even a detailed report in technical language might not suffice and they will need additional information (Neuman 2003: 470). One must also remain aware of the fact that many human service professions, for example social work and psychology, are diverse and cover many specialised fields in which not everyone will be a specialist (Rubin & Babbie 2005: 661).

The research report must be of such a nature that a clear relationship between reader and author can emerge, upon which the rest of the content can be built. A research report is not normally illustrated with a talk or slides, and therefore the report must be able to stand on its own and convey its message clearly, honestly, thoroughly and informatively, although diversity of content, presentation and structure cannot be avoided (Sarantakos 2000: 444).

THE RESEARCH PROPOSAL

The research proposal is the report in which candidates initially set down their problem in writing. The purpose of the research proposal is to help one think

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through the problem. In a proposal the problem formulation, the purposes, the methods and a tentative organisation of chapters will already be offered. A research proposal is a written document in which researchers specify their intentions, and the reasons for the investigation and the methods that will be utilised. The research proposal is written before the investigation commences.

THE SUBJECT

The subject or problem should always be spelled out carefully and explained in a simple manner (Williams, Tutty & Grinnell 1995: 318). With the research problem as point of departure, specific research questions should be developed, which in turn determine the goals and hypotheses. Goals must always be specific and defined operationally in order to make them clear and feasible.

Most subjects considered for research are initially complex and vague. After careful consideration, the initial strangeness and even fear of the subject disappears and it gradually becomes clearer. The complexity of the report will inevitably vary according to the reading public's understanding of the subject.

The author should, throughout the report, deal with the subject without furnishing too many details. The reader as a person who has no idea of a particular study must always be conceptualised by the author. In time the report becomes general knowledge to the author or student, and it must always be remembered that the reader does not know the detail – it must be properly explained.

THE REPORT ITSELF

The report itself is, of course, the core of the process. The purpose of a report should always be to create common ground between the reader and the writer of the report. Authors want the reader to share their knowledge and their attitude toward it. A well-written report closes the gap between the author and the reader. It is important to initially catch and then to hold the reader's attention in order to meet minds and to encourage the reader to read the entire report.

BEFORE THE PROCESS OF WRITING

Neuman (2006: 494) calls this element of a research report the prewriting phase. This refers to an early step in the writing process during which an author organises notes, makes lists of ideas, outlines thoughts, and makes certain that bibliographic citations are complete. Before commencing to write, the author should have records that provide the most accurate description possible of the events in the research setting. Accuracy can be improved by using aids such as a tape recorder, video recorder or note taking. All of these strategies should be investigated before the actual inquiry takes place.

All available sources should be scrutinised for possible utilisation in the investigation, referring especially to relevance and reliability. The prospective researcher should be on guard not to be sidetracked by the overwhelming number of sources at this stage. By keeping the aims of the study in mind, the number of available sources is likely to be reduced to the really applicable ones. At this stage the author should determine the outlines of the investigation and organise his or her style of presentation so that the written report will make sense to the reader.

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THE PROCESS OF WRITING

According to Wolcott (2001: 22), the writing should start with the first ideas on paper at the beginning of a particular research project. This is a great way of marshalling one's thoughts and uncovering gaps in one's thinking. This implies that authors should be objective when discovering flaws in the process and do everything possible to rectify them. This is often referred to as free writing or composing – writing without stopping for ten minutes, and making no corrections or rereading, and without checking spelling or references (Neuman 2006: 494; Wolcott 2001: 25).

The real process of writing commences when all the preceding matters have been dealt with – it is never easy to get started. Ritchie and Lewis (2003: 293) say that at this point some preparation is needed in terms of both mental and physical organisation. This stage is referred to as the bleeding stage, where one writes methodically, which reflects a combination of confidence and command with regard to writing (Wolcott 2001: 26). However, once writing has started, the initial hiccups are often overcome, and this has a lot to do with motivation and confidence in writing.

The report should be written and developed in such a manner that the total document is attractive and stimulates the reader to want to study it. In the actual writing and revision of the report, authors should aim to be fresh and brief, and take joy in their writing, be clear in what they want to say, and be interesting and informative (McBurney 2001: 77–78). There should always be a balance between the description and interpretation of the data (Patton 2002: 503).

The actual writing of the report is the final round-up of the process of careful study and thought, and the systematic collection of data. Inspiration should never be ignored, and authors should realise that their best ideas may possibly emerge while they have a pen in hand or are sitting in front of the computer.

THE PROCESS OF REWRITING

Rewriting is viewed by some as merely correcting errors, and punctuation and spelling mistakes, if at all necessary. Many authors underrate the value of revision and often lack the skill to make effective use of it in their own writing. Authors often miss errors in their own written work because of over-familiarity. Aspects that should also be considered include whether the report is interesting and clear throughout, whether the chapters are appropriately arranged, whether ideas follow logically on one another from paragraph to paragraph, and whether the title and the contents are complementary.

The researcher should reread and improve the existing material repeatedly, bearing in mind that writing is a matter of working, reworking, working at, working through and adding finishing touches. The purpose of all this is to review one's own written work critically and add improvements before the report is finally typed and bound.

According to Neuman (2006: 495), rewriting involves two processes: revising and editing. Revising means inserting new ideas, adding supporting evidence, deleting or changing ideas, moving sentences around to clarify meaning, or strengthening transitions and links between ideas. Editing means cleaning up and tightening the language, checking grammar, adjusting sentence length, and reorganising paragraphs to improve communication and strengthen style.

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SECTION **C**

2.1.6 Sections of a research report

A research report can be arranged in a variety of ways, but for the purpose of this chapter we offer suggestions on the following: title; the title page; acknowledgements; abstract; key words; table of contents; introduction and problem statement; goals, objectives and hypotheses; limitations of the study; definition of concepts; literature review; research methodology; findings; discussion; summary, conclusion and recommendations; appendices; and bibliography.

THE TITLE

The title of a manuscript should unequivocally describe the contents, be concise and to the point, and stimulate the reader to think further. As Mc Burney (2001: 79) adds, it "is the chance to gain the attention of the desired audience". The title is, after all, the first element a reader sees. A title is the advertisement that will either "sell" the report or not. The title should catch the attention of readers while at the same time informing them about the main focus of the study (Silverman 2000: 222). A good title informs the reader about the major dependent and independent variables and the envisaged major findings (Monette et al. 2005: 471). It should be simple and unambiguous, and one should never endeavour to reflect all variables in it. These can be discussed in the introduction to the study.

A catchy title may be a good idea, but one should be careful not to go overboard with one that nobody can understand or grasp the meaning of what is to follow (Rubin & Babbie 2005: 665). Phrases such as "a report on" or "a study of" add little information and should be avoided. The running head is placed at the top of the title page. It is an abbreviated title consisting of no more than 50 characters and spaces. The number of words in the title should preferably not exceed 16. When the article is printed in a journal, the running head will appear at the top of each page.

THE TITLE PAGE

The title page is the first page of a research report and contains the title of the paper, a list of all the authors' names, their institutional affiliation, their qualifications and addresses (Gravetter & Forzano 2003: 404; Rubin & Babbie 2005: 665). This should be correctly given with full details of all involved in the study.

ACKNOWLEDGEMENTS

Acknowledgements thank others for their contribution to the study and are often personal statements by the author about the amount of support received while doing it (Alston & Bowles 2003: 297). Where financial support has been received from a specific research board or business enterprise, there are prescriptions on what must be said and what not. Often they prescribe the exact wording to be used in acknowledgements. These are often an additional extra for research reports. Acknowledgements normally appear at the beginning of a report, either as a separate section, as part of the introduction, or as a footnote on the first page of the report.

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ABSTRACT

The abstract must include all important elements of the research report; no one who reads the research study after reading the abstract should be surprised by

what he or she finds in the report or article. Readers paging through a document often use the abstract to ascertain whether they need to read the document. Even though the abstract appears first, it is usually written last because it essentially summarises the work (Alston & Bowles 2003: 288; Welman, Kruger & Mitchell 2005: 249).

Although the abstract is one of the shortest sections of the report, it is often the most difficult to write, and is the most important part of the publication because so much must be said in a limited space (Gravetter & Forzano 2003: 405; Graziano & Raulin 2000: 366). An abstract should compress a long and complex report or manuscript into a few paragraphs (Royse 2004: 320). The abstract is often modified repeatedly in order to reflect the essence of the report in the predetermined number of words and in an extremely condensed form. As a general guideline, abstracts should be between 100 and 500 words, according to the requirements of the specific institution or journal. Sometimes an abstract must be submitted in another language or even in more than one.

KEY WORDS

Key words are important for doing literature searches and for the general indexing of the study. Key words should include only the real key words of the subject, meaning words that would contribute to the study and give readers an idea of what they can expect in the report. Such words can be regarded as the topic of the investigation, for instance HIV or migrant labourers, as well as the specific group of people under investigation, whether it is children, adolescents or older persons.

TABLE OF CONTENTS

The table of contents is also important and should present, at a glance, a complete visual image of the data that can be expected in the report. It should also indicate accurately the page numbers of all major and some minor headings as well as tables, graphic representations and appendices.

INTRODUCTION AND PROBLEM STATEMENT

The introduction sets the stage for the rest of the report and should introduce the reader to the problem to be studied as well as the importance of the topic. It also places the study into a specific frame of reference (Glicken 2003: 241; Royse 2004: 311). According to Grinnell and Unrau (2008: 412–413), the introduction to a report often proves the most difficult section to write because besides being a short section of the report it should also place the study in perspective and give some background to the problem. The introduction should offer a brief description of the subject of the study as well as the background to the study, the context, the research problem, a general statement and specific questions generated by the problem, and also of the methodology which will address these questions (Punch 2005: 265; Welman et al. 2005: 249). In order to solve a problem one must specify it and explore ways of solving it. The relationship between the relevant investigation and previous research in the field should also be indicated in the introduction.

Although acknowledgment of the sources of ideas must be given, a thorough history of the problem is unnecessary (McBurney 2001: 80). The introduction should capture readers' attention to the extent that they are motivated to continue reading

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SECTION
C

the report. The purpose is to minimise issues that are not clear and to maximise understanding. According to Salkind (2006: 263), the goal of the introduction is to provide readers with sufficient information to understand and appreciate the importance and scope of the problem. The introduction should thus place the total investigation in context and should provide a framework for the problem that is being studied. The introduction should further conclude with some research questions on which the goal and objectives are based.

GOALS, OBJECTIVES AND HYPOTHESES

The goals, objectives and hypotheses should be clearly presented and follow on to the research questions. It is generally accepted that for every research question a specific objective must be formulated. The goal should again be representative of all objectives, formulated in one sentence.

LIMITATIONS OF THE STUDY

No scientific study goes without some shortcomings and failures regarding the interpretation or application of the findings, and this should be made explicit (Grinnell 2001: 424). Trying to hide them discredits the author because every seasoned researcher knows that every study has some shortcomings, such as a population that would not participate in the study or problems experienced with the sampling technique used for it. By listing its delimitations, the author in fact adds to the scientific quality of the study.

DEFINITION OF CONCEPTS

A section on the definition of concepts is important where all applicable concepts are defined, including the key words. Definitions should include some current definitions of the terms as well as the author's specific meaning and use of those terms in the context of the study.

LITERATURE REVIEW

The field of study has to be located and placed in the context of the general body of scientific knowledge in the research report, and this is usually done through a literature review which maps out the main issues in the field being studied, and should point out where this particular research fits in (Rubin & Babbie 2005: 665). The literature study should convey the scope of the problem, the objectives, the rationale for the study and its significance and importance. This section of the report should also summarise previous research on the topic, how the current study is connected to previous studies and how it will build on to the knowledge base of the particular topic.

To a certain extent the literature review serves a bibliographical function for readers by indexing the previous research on the topic (Babbie & Mouton 2001: 566). The need for conciseness dictates that only what is relevant to the argument should be included in the report.

RESEARCH METHODOLOGY

The description of the research methodology used by the researcher should be viewed as a separate section of the research report. In this section the research

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methodology is described comprehensively so that the reader develops confidence in the methods used. Rubin and Babbie (2005: 666) add that the worth of the findings of a study depends on the validity of the study's design and data-collection procedures. In this section of the report the focus should be on research design; the population, including sampling techniques; data-collection methods (Alston & Bowles 2003: 66; Grinnell & Unrau 2008: 413); the procedures used; the apparatus and measuring instruments; the applicable ethical aspects; and the steps according to which the data were analysed.

The researcher should, however, guard against becoming bogged down in technical detail.

FINDINGS

The largest portion of the report consists of the findings, including the processing, analysis and interpretation of the data in figures, tables or other forms of data display. Here the researcher must convey to the reader, participants and any other interested groups that the data were competently analysed and must tell the reader what was found (Bless, Higson-Smith & Kagee 2006: 170; Mitchell & Jolley 2001: 535).

In this section of the report, the review of the literature and the findings of the empirical methods are compared with each other. A number of subheadings which relate to the major themes of the findings should be suggested at this stage (Alston & Bowles 2003: 292). These headings mostly coincide with the questions in the measuring instrument. The findings may be reported in a quantitative and/or qualitative manner. The interpretation of the results should follow logically from the actual data obtained from the study. Negative findings should be reported on – in science it is often just as important to know that two variables are not related as to know that they are (Babbie 2001: 475; Rubin & Babbie 2001: 78).

DISCUSSION

The discussion should begin with a brief summary of the results in non-technical language and the reader should also be told what the results are believed to mean and how they should be interpreted. The discussion section should always be closely linked to the findings and provide an explanation of the results (Marlow 2005: 279). The discussion should also focus on the possible generalisation of the research findings and future directions that research might take (Bless et al. 2006: 171). If there are weaknesses in the current study, one should describe ways in which they might be overcome in future studies. It should be kept in mind that the goal of any research endeavour remains to find answers to questions (Graziano & Raulin 2000: 369–370).

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section of the report presents a summary of the investigation and further interpretation, as well as the conclusions and recommendations. The summary of a report serves two purposes: it summarises the main points and suggests the idea of finality to the reader. In the further interpretation of the report, the findings of the study should be connected to some real-life situations and the discussion should centre on how it could help practitioners to better understand ways of dealing with

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that problem. These can be seen as the implications of the study (Glicken 2003: 243). In the discussion section of the report, control and judgement are needed to reach the delicate balance between not saying what needs to be said and repeating information. According to Salkind (2006: 264), in this section the researcher has the opportunity to sum up the purpose and findings reported in the manuscript. It is here that any statement as to what contribution might have been made by the current research, how well the original question has been answered and to what extent the goal and objectives have been obtained will be found.

The report should conclude with a statement of what has been discovered about the subject matter and where future research might be directed (Babbie 2001). Recommendations should always be based on the conclusions and should be of a practical nature, so that they can be utilised maximally in practice. According to Bless and Higson-Smith (2000: 141), research is mainly relevant if it has implications for the improvement of the human condition. A recommendation is simply a suggestion to the next researcher to do something about the issues being recommended. However, recommendations should be carefully worded in order to ensure that the right person acts correctly with regard to a situation.

APPENDICES

The appendices are the second-last section of the report, and the pages are numbered as part of it. All appendices should be numbered in sequential order by using A or 1, B or 2, and so forth, and be named to correspond with the reference in the text (Bless & Higson-Smith 2007: 171). Appendices can be described as material which is not part of the text or which is not essential to the thought processes contained in the report and which can, therefore, be attached at the end of the document. This generally includes copies of the measuring instruments used in the study, letters of permission to do the research, ethical approval from the board or supervisory body, and other relevant material. This helps the reader to judge the quality of the measuring instruments as well as to see in what manner the researcher has delineated the data and whether this is correct and done consistently.

Owing to the restriction on the length of articles, the appendices are not included, which can sometimes be regarded as a limitation to the report in article format. Appendices are found in most research reports and usually offer a convenient way of presenting necessary information which would otherwise disturb the flow of the report. Appendices should be kept to a minimum and each one that is included should be referred to in the text of the report.

BIBLIOGRAPHY

The bibliography can be regarded as the last section of the report and provides complete information on almost all items cited in the manuscript (Gravetter & Forzano 2003: 413). It is important to ensure that all sources in the bibliography are in the text and vice versa. A list of references should always be in alphabetical order and all kinds of sources such as journal articles, the Internet, textbooks and dissertations should be compiled into one list of references. The purpose of a bibliography is to enable the reader to control and trace the sources, and to see to the relevance and topicality of the sources used. An incorrect and inconsistently done bibliography is

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often the first indication of inaccurate work by the researcher. Mistakes in this area make one wonder about the accuracy of the rest of the report.

In conclusion of this part of the chapter on the sections of a research report, it can be stated that a clear bridge should be built between the various sections of the research report so that they form a unit. A brief report such as a research article is not divided into chapters, but only into a few sections. The outcome of most good research projects is to suggest new and important questions that still need to be answered. Suggesting directions for future research is a natural part of any well-designed and well-executed research project (Graziano & Raulin 2000: 370).

2.1.7 Technical aspects of a research report

Attention must be drawn to the following general technical aspects, including aspects of grammar and style:

- It is of crucial importance that the total project be planned thoroughly, preferably from the return date backwards. Authors must allow themselves sufficient and realistic time for each phase of the research project. Even with a carefully planned programme, problems with regard to the planning can still arise, but authors will know whether they are on time or whether they are running behind schedule.
- Authors are sometimes overwhelmed by the fact that they have to process a mass of information meaningfully in a limited article. A brainstorming session on one's own is needed to get thoughts on paper by writing down anything about the subject that comes to mind. After all, anything written is better than nothing at all. It is easier to improve on something than to create it. The ability to write accurately does not come automatically but is the result of careful study and practice.
- The concepts used in an investigation are the channels of science. Tutty, Rothery and Grinnell (1996: 125) emphasise the use of correct terminology in scientific writing. Concepts should be used as far as possible in a way that reflects their true meaning. If this is not done, confusion can result for the reader. The language in which a report is written must not be vague, and unnecessary connotations should not be attached to general terms.
- The use of headings for various subjects or points within the text is good practice because it divides the page, gives an overview of the report, and makes the report more attractive and easier to read. However, headings should never be used in an attempt to somehow link independent ideas to each other. The report contents should flow smoothly and logically from one paragraph to the next, or from one section to the next.
- The numbering of pages is important, and small roman numerals are allocated to all pages preceding the text, such as the preface. The text itself is numbered in Arabic numerals. Graphs and tables must also be numbered consecutively in the text.
- Footnotes are considered an obsolete practice and should be kept to a minimum in the text. Authors should consider whether it might be better to blend the

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information they had planned to place in a footnote into the text. Footnotes should be used only in exceptional cases, for instance for an explanation which, if included in the text, would disturb the logical flow of the argument and the reader's thought process.

- The selection of sources that might possibly be used from everything that is available can be done in a variety of ways, for example according to the date of publication or the status of the author. Because there is normally more material available than could possibly be absorbed into the report, the author should select beforehand on the basis of what needs to be emphasised, what could be accorded lower priority, or what could be ignored completely. The main emphasis is thus deciding on the thrust of the manuscript and what is the most important thing that needs to be communicated.
- Numbers up to ten should be written in words, although percentages, unusual fractions, decimal figures, sample sizes and ages are usually expressed as numbers. If a sentence commences with a figure, that figure is usually written as a word.
- If a report is written after the investigation has been completed, the past tense is used as well as when research of previous researchers is discussed (Welman et al. 2005: 260).
- Researchers should avoid language implying bias against people on the basis of gender, sexual orientation, racial group, ethnic group, disability or age (Gravetter & Forzano 2003: 401).
- Information reflected in a graphic representation need not be repeated in full in the discussion. The figure or table should depict a comprehensive image of the relevant situation, and the brief discussion directly afterwards should focus only on the main points and implications emanating from the presentation. The heading of a figure or table should state the subject concisely in as few words as possible. Graphic representations must be large enough to be clearly legible. Alternating types of graphic are important and too much information should not be squeezed into one graphic. Information that can be grouped into categories can easily be represented in tables. Figures and other representations are, however, better choices for ungrouped material.
- The reference list provides the reader with the information needed to seek out the original source of information. Each study discussed in the paper is listed in alphabetical order by the last name of the author(s). Works by the same author are arranged chronologically according to publication date. In addition to the author(s) and the title of the research study, a complete reference to the research report is included.
- Authors should ensure that each reference used in the text is mentioned in the list of references, and that sources do not appear in the list of references that are not referred to in the text.
- The primary purpose of writing a research report is communication, and anything that obscures it should be avoided. Pronouns should be used sparingly and

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should never be ambiguous. Abbreviations should also be used sparingly and should always be explained to the reader. Using the active voice and simple sentence structure can help a writer avoid numerous communication pitfalls. A good way to improve a research report is to have someone who was not involved in the research review it. Anything that is unclear to this reviewer will probably also be unclear to other readers (Graziano & Raulin 2000: 371).

- Plagiarism means to use another person's words or ideas without giving credit to that particular author, whether intentional or accidental (Szuchman & Thomlison 2004: 8). When reporting on the work of others, who said what must be clear (Rubin & Babbie 2005: 663). Many opinions exist on the topic. Babbie (2007: 506), for example, mentions a few ground rules regarding plagiarism, namely that one cannot use another writer's exact words without using quotation marks and giving a complete citation, and it is also not acceptable to edit or paraphrase another person's words or ideas and present them as one's own.
- With regard to quotation marks, Steward (1990: 113) points out: "Double inverted commas are preferred – single inverted commas are recommended for a quotation or highlighted word or phrase within a longer quotation." An author should guard against too many direct quotations. The use of long quotations should be avoided completely. Authors should reflect their own ideas and opinions in the report and then support them with evidence from other sources. A golden rule with regard to direct quotations is to use them when the quotation best states the point to be made, or when the direct words of the person who is quoted describe the relevant matter very aptly or accurately. Too many direct quotations disturb the course of the issue being discussed, and the content can easily lose its logical flow. Too many thoughts should not be drawn from one author, since this may give the impression that only one or two sources have been consulted and that these few have served as the basis of the entire investigation.
- Writing a research report requires spontaneity and creativity. An active style is preferred to a passive one because it requires fewer words and is more interesting to read. Authors should also guard against subjective and emotional statements. The tone of the report should be as objective and impersonal as possible, and grammatical and stylistic neatness should receive high priority. It is essential not to raise peripheral issues above main issues, and not to get caught up in detail and side issues. Some authors tend to dwell on side issues and then get totally sidetracked. This often leads to reinventing the wheel (writing about issues that have been written about before by other authors). If the content is cohesive, the reader will get the gist of it more easily. The subsections of the texts will also relate well to one another and to the whole. Ideas should be grouped together in certain paragraphs, and paragraphs should have central themes. Clear writing stems from clear thinking, and those who cannot write well probably cannot think well. To be a good writer one must understand what one wants to say. Unnecessary words and other redundancies which tend to creep into the sentence construction of most authors should be avoided as far as possible.
- Accurate sentence construction is very important. Even though short sentences offer greater clarity and impact, authors will have to find their own balance

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between brief and long sentences. Very brief sentences can easily leave an unfinished and cryptic impression. Using sentences of varied length is probably the best way to retain the attention of the reader. There are, of course, right and wrong styles, but authors should attempt to develop their own unique style of writing. Almost everyone has a need to give a personal hallmark to his or her own work.

- Grammar and style should be as simple and clear as possible. Flowery writing is irritating, and slang should be avoided, as it may possibly have meaning only for the author. Authors should not attempt to impress with their style but should rather write clear, reliable text. Researchers are often so familiar with their material that they have too much to say, with the result that the main points get lost. Researchers should have integrated their material so well that they are able to convey complex ideas effectively and meaningfully to the average reader. Words should, wherever possible, be used according to their familiar and accepted meaning. Select those words and phrases which convey the relevant idea best.
- Almost without exception, it can be said that researchers who submit an untidy and poor report have also been careless in the collection, processing and presentation of their data. Faultless typing and layout of the material are also of great importance and should be executed according to the latest requirements. Authors remain responsible for typing errors and it is their duty to do careful proofreading.
- The finishing touches of the report also rest with the researcher. A manuscript's final preparation for submission will require much time and effort from the writer to ensure an attractive paper which the editor and other readers can read without difficulty. A neat and correct manuscript always indicates that the author rates his or her own work highly.

SUMMARY

This chapter describes a few crucial aspects that should be familiar to researchers prior to attempting to write their research report – the goals and objectives of a research report, the requirements expected of a research report and the elements influencing the nature of the report, such as the author him- or herself, the reading public, and other factors. The sections the research report should contain are spelled out, and the technical aspects of crucial importance are delineated.

Self-evaluation and group discussion

You have now completed all aspects of your research and are ready to write your report.

- Plan your research report in detail. Do not, however, exceed ten written pages.
- Present this plan to your study group. Ask them to listen carefully and offer suggestions for improvement.

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SECTION

D

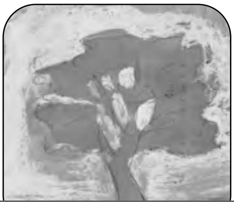
Steps unique to the qualitative process

QUALITATIVE RESEARCHERS AT WORK	
Section D Steps unique to the qualitative process	
Chapter	**Research process**
18. Theory and literature in qualitative research	**Phase 3: Planning** Step 6: Select a paradigm and consider the place of literature review
19. Qualitative research designs	Step 7: Select the research design or strategy
20. Information collection: participant observation	Step 8: Select method(s) of information collection and analysis
21. Information collection: interviewing	
22. Information collection: document study and secondary analysis	
23. Sampling and pilot study in qualitative research	Step 9: Frame and develop the sample **Phase 4: Implementation** Step 10: Consider the applicability of elements of a pilot study Step 11: Consider entry and access in implementing the design, collect materials, record, and undertake the literature study (where applicable)
24. Qualitative data analysis and interpretation	**Phase 5: Data analysis, interpretation and presentation** Step 12: Process and analyse data and verify results Select additional criteria for judging adequacy
25. The qualitative research report	Step 13: Plan narratives and write the report

In this section, steps 6 to 13 are described for the researcher who undertakes a qualitative study.

These steps comprise a literature review pertaining to the qualitative research approach, research designs (strategic or traditional) available to the qualitative researcher, and four forms of information collection, namely participant observation, interviewing, document study and secondary analysis.

Sampling and the conducting of a pilot study are then described, as well as data analysis and interpretation in qualitative research. Finally, certain observations on the qualitative research report are made.



18

CSL DELPORT, CB FOUCHÉ & W SCHURINK

Theory and literature in qualitative research

Learning objectives

Studying this chapter should enable the reader to

- understand the importance of selecting a paradigm that underpins a qualitative study
- gain a perspective on the place of theory and literature in a qualitative study.

1. INTRODUCTION

The first step unique to the qualitative process is to select a paradigm and to consider the place of theory and a literature review in the research process. As the topic of the literature review has already been adequately addressed in Chapter 9, no further elaboration on the elements of an in-depth literature review will be done in this chapter. As discussed in Chapter 9, the necessity of a timely literature review, a strategy for conducting a literature review, different sources for conducting such a review, as well as practical suggestions and the most effective format for organising the review, are also relevant to this step of the qualitative research process. However, the difference between theory and a literature review and the general functions of a literature review from a qualitative approach will be highlighted, and the way theory and a literature review are used within the different designs will be discussed.

2. PHASE 3: PLANNING

2.1 Select a paradigm

The first thing a researcher must outline is the paradigm that underpins the study – the researcher's point of view, or frame of reference for looking at life or understanding reality. A paradigm, according to Babbie (2007: 31), is the fundamental model or frame of reference we use to organise our observations and reasoning.

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SECTION
D

Monette, Sullivan and DeJong (2008: 37) refer to Thomas Kuhn (1970), who concluded that scientific activity is shaped by paradigms, which are general ways of thinking about how the world works and how we gain knowledge about the world. Paradigms are fundamental orientations, perspectives or worldviews that are often not questioned or subject to empirical test. Although a paradigm does not necessarily answer important questions, it can tell us where to look for the answers. Where one looks will largely determine the answers one finds; a paradigm shapes both what we see and how we understand it (Babbie 2007: 32). All qualitative researchers approach their studies with a certain paradigm or worldview, a basic set of beliefs or assumptions that guides their inquiries. Each of the paradigms offers a different way of looking at human social life, makes its own assumptions about the nature of social reality, and can open up new understandings (Babbie 2007: 33). Ultimately, paradigms are neither true nor false – they are only more or less useful (refer also to Chapter 19 section 3).

Thomas Kuhn, as long ago as 1970, drew attention to the role of paradigms in the natural sciences, and readers who have difficulty in understanding paradigms and identifying their own should familiarise themselves with his work. Social scientists have since developed several paradigms for use in understanding social behaviour. According to Babbie (2007: 33), each of the paradigms offers a different way of looking at human social life. Each makes certain assumptions about the nature of social reality. Each opens up new understandings, suggests different kinds of theory and inspires different kinds of research. These paradigms offer a variety of views and influence the manner in which one conceptualises the rest of the process. (Consult Chapter 2 section 5, on this topic.)

2.2 The place of theory and the literature review in a qualitative study

Once the researcher has determined and explicitly stated a paradigm, the decision that many qualitative researchers then grapple with is to determine to what extent theory and a literature review must be used to guide their studies.

It is not uncommon practice for qualitative researchers to state that there is no need to start from a review of the existing literature and even that such a step in the beginning of a qualitative research process should be avoided. In fact, qualitative researchers were for quite some time convinced that existing literature should not be used at all before data were collected. This stemmed from qualitative research being viewed as "discovering new fields" or "exploring areas that are new" (Flick 2009: 48). However, due to large-scale developments and diversity within the qualitative research field, this view has changed in recent years. As Flick (2009) warns, it is rather naïve to think that there are still completely undiscovered fields to be explored, or moreover, that *tabula rasa* (Latin for "cleared, uncluttered table"), is still being promoted as in the early days of grounded theory. Already in the early 1990s, Flinders and Mills (1993: xi) described this "loss of theoretical innocence" as follows:

> Few of us now claim to enter the field tabula rasa, unencumbered by preconceived notions of phenomena we seek to understand. Our faith in "immacu-

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> late perception" is on the wane. Seeing the world as it really is, objectively, without distortion or bias or partisanship – such aspirations seem neither as reachable nor as realistic as they once did. Today we are more circumspect, having begun to turn a critical eye toward our own conceptual frames of reference.

The question of theory in contemporary qualitative inquiry is not as simple as it seems, though. While it is fair to say that qualitative researchers value theory as an overarching perspective – assisting in attempts to integrate various diverse findings and thoughts – using it often gets in the way of proper qualitative inquiry.

> This is because the primary focus of qualitative research is, front and center, an examination and inquiry into meaning. If theory can help us coordinate and orchestrate our growing sense of richness of meaning as we do our qualitative inquiry, then it is a useful tool for qualitative researchers. If we find that theory forces us to take a premature stand on certain issues of meaning that need further exploration, then we are best advised to defer its presence, or even set it aside (Shank 2006: 8).

Thus, although there is increasing agreement that theory has a place in qualitative research, there is currently no consensus as to the best usage of it. This is illustrated well by Anfara and Mertz (2006: xix) who, after having examined textbooks in the field, conclude that the role of theory in qualitative research leaves three different understandings:

- First, that theory has little relationship to qualitative research
- Second, that theory in qualitative research relates to the methodology the researcher chooses to use and the epistemologies underlining that methodology
- Third, that theory in qualitative research is broader and more pervasive in its role than methodology

They conclude that these different understandings are responsible for the confusion about the role and place in qualitative research.

Grbich (2007) demarcates four options by which theorising from qualitative data may be approached:

- The first represents one's *pre-chosen theoretical position* informing one's research and against which one will place one's findings.
- The second option entails the *methodological underpinnings* constituting one's data orientation and the process one follows.
- *Researcher choice* is the third option where, whenever one wants to provide a more abstract explanation of one's findings, one may choose from a variety of conceptual frameworks existing across disciplines.
- Finally, there is *theory minimisation,* which is imbedded in postmodernism where minimum interpretation is required and data are displayed optimally in order to assist the reader "to get close to the participants' experiences and make their own decisions based on their own life experiences" (Grbich 2007: 186).

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While the various positions qualitative researchers may hold as to the role theory should play in qualitative research cannot be explicated here, the following remarks by Wolcott (2001: 95–96) in this regard are valuable:

> Regard theory as user-friendly – an invaluable resource if you know how to use it. If you aren't quite there yet, share your musings about how the right theory at the time might have helped. That seems preferable to imposing some tangential theory that lends from rather than functions. Nobody insists that dissertations have to read like dissertations. The awkward way that theory gets interjected into most of them is a big part of the problem. If practical solutions, or broad concepts, or the drawing of analogies, have been adequate for organizing and presenting your data, talk about them. Don't be tempted to scratch for some lofty theoretical notion that may only obscure the importance of the observations and insights you have to offer.

Related to the place of theory in qualitative research is the place of utilising existing literature. There are important questions regarding the role of the literature review which qualitative researchers need to find answers for. What is the role of the literature review in qualitative research? Do we need to do a literature review to find a research question, much as we do in many forms of qualitative research? Once we find a research question or a target area, do we turn to the literature to help refine our questions or frame our approach? Or do we avoid the literature altogether, and let the world of experience lead us directly? These and similar questions are important to address (Shank 2006: 116). According to Esterberg (2002), some naturalistic researchers caution against becoming too wedded to a particular theory or viewpoint before immersing into a field setting, but this author is of the opinion that this concern is a little overstated.

> By knowing what other researchers have already said about your topic, you are in a better position to come up with a well-thought-out research plan. And at some point during the research process, you will still need to conduct a literature review to help you place your own research in context (Esterberg 2002: 37).

While many qualitative researchers would answer the preceding question in the affirmative without thinking properly, others will be more cautious. Wolcott (2001) is one such qualitative researcher. He advises against the practice of devoting an entire chapter, normally Chapter 2 in a dissertation, to reviewing the literature. He writes:

> My sense is that readers (and listeners) want to be and ought to be engaged immediately with a sense of the problem you are addressing, rather than first be subjected to a testimonial to how learned you have become. They will assume that you have a solid rationale for undertaking your research and will reveal it in time. They are not likely to insist that you plow through the entire history of your topic before you dare take a step of your own.

As an alternative to this, Wolcott (2001) proposes drawing on the relevant work of others on a when-and-as-needed basis. In this instance, literature seems more likely to come *after* the presentation of new research than in anticipation of it (Wolcott 2001: 73–75).

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While the majority of qualitative researchers would most certainly shy away from Wolcott's (2001) proposal, believing it to be too radical, Silverman (2005) points out that an increasing number of researchers would find at least some of his views on the place of reviewing the literature appealing. In our view, Shank (2006) provides a very good middle-ground approach to this rather complex and contentious issue. He distinguishes two schools of thought as to the nature of the literature in qualitative research, namely: (1) the "ignorance is bliss" school, and (2) the school of thought where the importance of reading and reviewing and understanding the literature on the research topic before data collection is acknowledged.

Exponents of the "ignorance is bliss" school believe that qualitative researchers should treat field data on their own terms. One way to ensure that field data are given proper weight is to set aside predispositions, preconceptions and biases and let the data speak for themselves. Adherents to this school of thought break the literature review up into two stages.

> At the outset, you need to read only enough research and theory to make sure that you are not doing research that has already been done. Once you are well into your research, or perhaps at the end of your data collection, then you return to the literature and review it, based on what you have learned from your field experiences. So, it is not the case that you are avoiding a literature review. You are simply altering its timing, because of your need for having as fresh a perspective as possible when you do your data collection (Shank 2006: 117).

Exponents of the second school hold that the more one knows about the research topic the better one will fare in planning the research. Instead of using the literature review to emphasise the research's relevancy in answering a question, it is used to demonstrate that the topic in question is in some way incomplete.

> Again, it is not the case that we have a wrong understanding of some phenomenon; it is the case that we do not understand it well enough. But it is important to document the understanding that we do have, and that is the role of the literature review (Shank 2006: 118).

In understanding how linkages can be made between qualitative research and the work of others, it is important to continuously keep the difference between theory and literature review in mind. According to Rubin and Babbie (2001: 51), "[a] theory is a systematic set of interrelated statements intended to explain some aspect of social life or enrich our sense of how people conduct and find meaning in their daily lives", while Berg (2007: 19–20) mentions that social scientists usually define theory as "a system of logical statements or propositions that explain the relationship between two or more objects, concepts, phenomena, or characteristics of humans – what are sometimes called variables". Neuman and Kreuger (2003: 44) state that "social theory was defined as a system of interconnected abstractions or ideas that condenses and organizes knowledge about the social world". It thus seems as if theory provides an explanation for phenomena; it helps us make sense of and see patterns in diverse observations; it helps direct our inquiry into those areas that seem more likely to show useful patterns and explanations; and it helps us distinguish

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between chance occurrences and observations that have value in anticipating future occurrences (Henning 2004: 14; Monette et al. 2002: 28–29; Rubin & Babbie 2001: 51).

Relevant and appropriate theories thus form the theoretical framework of an empirical study, and the literature review should be organised around the theories. A literature review, according to Mouton (2001: 87), is a review of the existing scholarship or available body of knowledge that helps researchers to see how other scholars have investigated the research problem that they are interested in. We want to learn from other scholars: how they have theorised and conceptualised on issues, what they have discovered empirically, what instrumentation they have used and to what effect. In other words, we do a literature review to familiarise ourselves with the current state of knowledge regarding the research problem and to learn how others have delineated similar problems. The place of theory and literature in the research process depends on the type of qualitative design that will be utilised, as the different designs utilise theory and a literature review to varying degrees and at different moments. One should take note of how theory and a literature review are used within the different designs after the decision on the utilisation of a specific design has been made. However, it is generally accepted among qualitative researchers, with the notable exception of a small number who are postmodernistically inclined, that literature should serve certain general functions irrespective of the design selected in all qualitative studies.

3. GENERAL FUNCTIONS OF LITERATURE IN A QUALITATIVE STUDY

From the first step in the research process – that is, the selection of a research topic – the researcher locates the research problem in a body of theory. A thoughtful and informed discussion of related literature should build a logical framework for the research that sets it within a tradition of inquiry and a context of related studies. The literature review serves four broad functions in qualitative studies:

- It demonstrates the underlying assumptions behind the general research questions. If possible, it should display the research paradigm that undergirds the study and describe the assumptions and values the researcher brings to the research enterprise.
- It demonstrates that the researcher is thoroughly knowledgeable about related research and the intellectual traditions that surround and support the study.
- It shows that the researcher has identified some gaps in previous research and that the proposed study will fill a demonstrated need.
- The review refines and redefines the research questions by embedding those questions in larger empirical traditions (Marshall & Rossman 1999: 43). As Rubin and Babbie (2001: 121) state: “What better way to ensure that your study will be valued as part of a cumulative knowledge-building effort regarding that problem ... [than a literature study].”

Flick (2009: 48) urges researchers to use several forms of literature in a qualitative study, including the following:

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- Theoretical literature about the topic under study (use insights and information from existing literature as context knowledge)
- Empirical literature about earlier research in the field of study, or similar fields (use information on how other people in this area work and on which level existing research concentrates to inform new studies)
- Methodological literature about how to conduct the research and use the methods selected (use information to indicate traditions, alternatives and controversies)
- Combined theoretical and empirical literature to contextualise, compare and generalise findings

4. THE PLACE OF THEORY AND LITERATURE REVIEW IN DIFFERENT QUALITATIVE DESIGNS

Shank (2006) correctly points out that the way qualitative researchers choose to conduct their literature review will depend not only on their topic but also on their approach. In the case where qualitative researchers strive towards building data-driven theory they should be able to enter the data-gathering process in as fresh and uncontaminated a manner as they possibly can.

> If you are looking for neglected angles and nuances and patterns that will enhance and complexify our current understanding of some phenomenon or issue, then you need to gain and document as complete an understanding of that phenomenon or issue as you can. In that fashion, you will have built the "standard" picture that you eventually hope to modify (Shank 2006: 118).

Anyone designing a study should thus consider how theory and a literature review are used within the different "traditions of inquiry", designs or strategies. The designs to be discussed in Chapter 19, and briefly discussed here with reference to the place of theory and literature, include the following:

- Narrative biography
- Ethnography
- Phenomenology
- Grounded theory
- Case study

The following discussion should be considered with the discussion of each of these designs in Chapter 19.

4.1 Theory and the literature review in a narrative biographic study

The use of theory varies considerably in the biographic method, depending on the type of biographic method employed. The biographical method and its variations as found in autobiography, biography, life history, documents of life or life story have been informed by postmodernism and have changed in many ways. This qualitative

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SECTION D

research approach, which has over the last decade and a half become increasingly popular, illustrates the continued debate about the role of theory in contemporary applications of the biographical method. In some instances an "objective" biography is written – as in a collation of facts around a central theme – in which case a thorough study of existing literature and other primary documents is of the essence. On the other hand, an "interpretive" or "fictionalised" model of biographical writing might devote a minimum of attention to original research and primary documents. Chang (2008), for example, believes that social science constructs should be included in the framework for analysing and interpreting in auto-ethnography.

> Although establishing a new theory is not a goal of auto-ethnography, utilising an existing theory to explain your case is possible. With this strategy, chosen theories can guide the process of data organization, analysis, and interpretation, and the structure of writing (Chang 2008: 137).

4.2 Theory and the literature review in an ethnographic study

Most ethnographers use one or two cultural theories to guide their ethnographic study. Leedy (2001: 152) states that researchers using this design should describe the nature of the study as it relates both to the research question and to one or more theoretical perspectives. This is mainly because theoretical perspectives before data collection are aimed at creating a context, point of departure or frame of reference from which data will be collected, rather than describing a particular theory or providing a theoretical base for the study. A researcher's interpretation will, as part of the introduction, be linked to wider issues of scholarly interest before the setting is described and the data analysed. Reference to theoretical perspectives before data collection within this design, however, does not exclude a literature control after data collection. This is confirmed by Leedy and Ormrod (2005: 138), who mention that existing theoretical frameworks in the field of ethnographic studies may lend structure and support during the interpretation process.

While it seems fair to say that classical ethnography generally adopts a theory-testing or theory-generating approach, significant changes are currently observed in ethnography. According to Grbich (2007), the move into postmodernism has resulted in an explicitly subjective orientation. Extensive display of data rather than elaborate theorising is increasingly seen as the best way to bring the reader closer to the experiences to be described. "However, many researchers draw on a range of theoretical perspectives usually at the micro level and with strong focus on the transitional nature of any conclusions" (Grbich 2007: 189). This is also illustrated in auto-ethnography, the approach which has already been briefly outlined under the biographic method above and which is based on postmodern principles where personal narratives of the author's experiences are described within a specific cultural setting.

4.3 Theory and the literature review in a phenomenological study

As with the ethnographic strategy, the phenomenological researcher goes into the

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field with a framework of what will be studied and how this will be done. The researcher thus specifies early in the study the philosophical grounds that will guide the study. Leedy and Ormrod (2005: 140), however, state that the final result of the phenomenology study is a general description of the phenomenon as seen through the eyes of people who have experienced it first hand. A phenomenological study is a study that attempts to understand people's perceptions, perspectives and understanding of a particular situation. As such, they state, its *findings* need to be related to an existing body of theory and research. This, by implication, tells us that the literature review should be performed after the findings of the research have been formulated. Creswell (1998) does, however, substantiate his point of view by stating that the "orienting framework" is more of a philosophical perspective than a distinct social science theory. One can, therefore, interpret this as meaning that the phenomenological strategy expects the researcher to provide a distinct philosophical point of departure (paradigm) before data collection, but that a literature review is more in the form of a literature control after the data have been collected.

4.4 Theory and the literature review in a grounded theory study

Many authors writing on grounded theory (e.g. Strauss & Corbin 1990; Creswell 1998; Leedy & Ormrod 2005) agree that, in a grounded theory study, one collects and analyses data before using any theory. In fact, the researcher cannot provide a theoretical framework, as the intention of grounded theory is to generate theory. The term *grounded* actually refers to the idea that the theory that emerges from the study is derived from and "grounded" in data that have been collected in the field rather than taken from the research literature (Leedy & Ormrod 2005: 140). A researcher could, in the report on a grounded theory study, include a literature review soon after a discussion of the research question, but this review, according to Creswell (1998: 179), neither provides key concepts nor suggests hypotheses as it does in deductive research. Instead, the final section of the report would discuss the relationship of the (new) theory to other existing knowledge. However, Flick (2009: 51) citing Strauss and Corbin (1998), lists nine ways in which the literature can be used in grounded theory:

1. To be used as a source for making comparisons in data collected
2. To enhance sensitivity to subtle nuances in data
3. To give accurate descriptions of reality
4. To give an orientation to the field and material
5. To serve as a secondary source of data
6. To formulate questions for early interviews and observations
7. To stimulate questions during analysis
8. To suggest areas for theoretical sampling
9. To confirm findings

4.5 Theory and the literature review in the case study

The use of literature and theory in a case study design is often varied. Depending

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SECTION D

on the type of case study conducted, theory might be completely absent from it, with a focus on a description of the case. In other instances, theory could be used to guide the study in an explanatory way (*before* data collection). In this regard, Babbie and Mouton (2001: 282) mention that "it is not uncommon for case study researchers to formulate broad 'conjectures' or 'theoretical expectations' at the beginning of their studies. Some of these 'conjectures' perform the role of 'guiding principles' and assist in structuring the data-collection process". In other instances, literature and theory are employed towards the end of a study either to support or disconfirm an existing hypothesis or theory (*after* data collection) or, as Leedy and Ormrod (2005: 135) put it, "to make comparisons, build theory, or propose generalisations".

SUMMARY

In this chapter, we emphasise the fact that it is important for a qualitative researcher to select a paradigm or a frame of reference that underpins and guides the study. Once the researcher has selected a paradigm, a decision must be made regarding the extent to which theory and a literature review should guide the investigation. Depending on the type of inquiry/design, it seems clear that social science theory and a literature review can be used in varying degrees before and after the data-collection phase of a study.

Self-evaluation and group discussion

Select one of the following research strategies or "designs": ethnography, phenomenology, biography, case study or grounded theory. Explain the following to your group:

- Why you have selected this particular paradigm
- At what point in the research process within the particular paradigm you will do your literature study, and why.

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19

CB FOUCHÉ & W SCHURINK

Qualitative research designs

Learning objectives

Studying this chapter should enable the reader to gain

- an understanding of the terminology related to qualitative strategies or designs
- a perspective on the different qualitative research designs
- a relatively in-depth perspective on five major qualitative research designs
- insight into the fundamental elements of qualitative research designs.

1. INTRODUCTION

Step 6 in the third phase of the research process from a qualitative perspective, namely the selection of a qualitative research design or strategy/strategies, will be described in this chapter. A discussion of the terminology related to research design will be given, followed by an outline of the importance of ontological and epistemological considerations in qualitative research, before five qualitative designs available to the researcher, reflecting the most important schools of qualitative research, will be discussed in more detail.

2. DEFINITION

As outlined in Chapter 10, definitions of research design from a quantitative perspective are rather ambiguous. The same is true of the qualitative approach. On the one hand, some authors refer to "design" as all those decisions a researcher makes in planning the study. Others, on the other hand, use the term to refer to a phase in the process. In quantitative studies, this refers only to those groups of small, worked-out formulas from which quantitatively oriented researchers can select or develop one (or more) that may be suitable for their specific research goal. The second – more specific – definition of research design is adopted in this book and, as

mentioned in Chapter 10, will be applied in a similar fashion in this chapter regarding qualitative designs or strategies available to the prospective researcher.

There is a difference in the way in which quantitatively and qualitatively oriented researchers view the nature of research designs. Whereas quantitative researchers consult their lists of possible designs and select one (or develop one from the models available), qualitative researchers almost always develop their own designs as they go along, using one or more of the available strategies or tools as an aid or guideline. There are also subtle differences in how qualitative researchers view designs. In this context terms such as *strategies*, *traditions of inquiry* and *approaches* are related to the concept of *design*. Denzin and Lincoln (2005), for example, strong advocates of the qualitative school, prefer to call methodologies such as ethnography, phenomenology and the biographical method “strategies of enquiry, or tools that can be used to design qualitative research”. Flick (2006: 141) and Kreuger and Neuman (2006) consistently refer to designs – both in the qualitative and quantitative contexts – while Babbie (2007: 31), on the other hand, talks about paradigms when referring to basically the same thing; that is, the approach the researcher selects to study a particular phenomenon. The existence of many different terms for basically the same thing causes a considerable degree of unnecessary confusion. For the purposes of this chapter, the term *design* or *designs* will be utilised for the equivalent of research design in the quantitative approach and will, therefore, refer to the option available to qualitative researchers to study certain phenomena suitable for their specific research goal, referred to by some authors as strategies or traditions of inquiry.

Unlike the quantitative paradigm, the qualitative paradigm requires the design of the research to be more than a set of “worked-out formulas”. The qualitative researcher is concerned with understanding (*verstehen*) rather than explanation, with naturalistic observation rather than controlled measurement, with the subjective exploration of reality from the perspective of an insider as opposed to that of an outsider predominant in the quantitative paradigm. As we have gathered from earlier chapters, every research project starts with an idea or a notion, develops into a topic and is eventually refined in a research question or problem formulation. There are no right or wrong questions about what to study or where to undertake one. Such an agenda could be developed from a number of sources, as outlined in more detail in Chapter 6. Of particular importance to qualitative designs is personal interest and curiosity as a source for the topic.

> Often a person’s own biography will be an influence in defining the thrust of his or her work. Particular topics, settings, or people are of interest because they have touched the researcher’s life in some important way. Others get started in an area because a professor or someone else they know is doing related research. Sometimes it is even more idiosyncratic: an opportunity arises; you wake up with an idea; you are out doing what you normally do and come across some material that strikes your fancy (Bogdan & Biklen 2007: 56).

3. ONTOLOGY AND EPISTEMOLOGY

The further development and execution of the research topic into a research design

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by a qualitative researcher will depend on the way the researcher believes the research question could be answered most truthfully and thus his or her assumption of how reality should be viewed, or as Mason (2002) indicates, the researcher's ontology. The first relevant question that the researcher should therefore ask when designing a qualitative study is: How should social reality be looked at?

Following from this are two basic answers, namely the belief that reality should be approached objectively as an external reality "out there" requiring the researcher to maintain a detached, aloof position when studying it. Or the belief that there is no truth "out there" and that reality is subjective and can only be *constructed* through the empathetic understanding of the research participant's meaning of his or her life world. Kvale (1996: 41) explains the difference between these ontological viewpoints aptly by saying: "The conception of knowledge as a 'mirror of reality' is replaced by the conception of the 'social construction of reality' where the focus is on the interpretation and negotiation of the meaning of the social world."

Behind these ontological beliefs lie different theories of epistemology or theories of knowledge and perception. The next question that is therefore relevant for the research design is: What are the principles and rules by which I believe reality should be known? Or differently stated: What research perspective should I use to design my research? The following research perspectives or major approaches, as depicted in Table 19.1, each with its own ontology, epistemology, methodology and methods of data collection and analysis, exist:

- Objectivism
- Interpretivism
- Constructionism

3.1 Objectivism

This approach is based on the belief that there is an external reality that can be studied objectively. Objectivity in this sense refers to the ability to know things as they really are. This is possible if specific methods are followed because pursuing these methods will place the necessary check on subjectivity and restrain personal judgement and emotions. Method thus plays a key role in enabling the researcher to understand the meaning that people give to everyday life experiences in an objective manner. This perspective is predominant in the quantitative paradigm. However, qualitative researchers (most notably realists), believing that the real world should be discovered by means of a systematic, interactive methodological approach and that knowledge arises from observation and interpretation, can also be regarded as objectivists (see Schwandt 2007: 256–258; Bryman & Bell 2004).

3.2 Interpretivism

Interpretivists believe that the subject matter of the social sciences is fundamentally different from that of the natural sciences. Therefore, a different methodology is required to reach an interpretative understanding or *verstehen* and explanation that will enable the social researcher to appreciate the subjective meaning of social action. The assumption is thus made that reality should be interpreted through the

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meaning that research participants give to their life world. This meaning can only be discovered through language (see Schwandt 2007: 314–317 for further explanation). Paradigms associated with interpretivism include symbolic interactionism, analytic induction and grounded theory (Schwandt 2007).

3.3 Constructionism

Constructionists believe that there is no truth "out there", only a narrative reality that changes continuously. Reality can therefore only be socially and personally constructed and the subject should be actively involved. Thus, reality is seen as the result of constructive processes. Associated paradigms include newer forms of ethnography, for example auto-ethnography, collaborative inquiry (PAR), appreciative inquiry (AI), personal–reflexive ethnography and narrative inquiry.

It is clear from the above that it is essential for a researcher to examine the foundations of his or her thinking. What is important to remember is that each foundational question could be answered differently depending on one's ontology (how one sees reality) and epistemology (how one thinks social phenomena should be studied). One's answers to these foundational questions will influence the way one goes about doing one's research. Therefore the same phenomenon could thus be investigated, analysed and interpreted differently depending on one's belief of what social reality is (ontology) and how social phenomena can be known (epistemology).

Recognising that there are different research perspectives, each with its own ontology, epistemology and methodology, enables the researcher to begin to understand his or her own philosophy of social research. Researchers' choice of a research perspective and the way they design their research should therefore truthfully reflect their own ontology, or belief of how social reality should be viewed, and their epistemology; that is, the rules by which they believe reality should be known (Mason 2002). It is further important to note that our epistemological and ontological perspectives should be consistent in order to guide us when generating knowledge and explanations about components of the social world. Therefore, commitment to a particular methodological frame of reference will influence and inform the study in very specific ways (Schram 2006).

An analysis of Table 19.1 shows that *qualitative research* is an umbrella term for different approaches or paradigms, each having its own theoretical background, methodological principles and aims (Flick 2006: 6). In the well-known text by Denzin and Lincoln (2000) it is aptly stated as follows:

> Qualitative research is an interdisciplinary, transdisciplinary, and sometimes counterdisciplinary field. It crosscuts the humanities, the social sciences, and the physical sciences. Qualitative research is many things at the same time. It is multiparadigmatic in focus. Its practitioners are sensitive to the value of the multimethod approach. They are committed to the naturalistic perspective and to the interpretive understanding of human experience. At the same time, the field is inherently political and shaped by multiple ethical and political allegiances.
>
> Qualitative research embraces two tensions at the same time. On the one hand, it is drawn to a broad, interpretive, postexperimental, postmodern, feminist, and critical sensibility. On the other hand, it is shaped to more narrowly

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Table 19.1 Evolving research perspectives

Paradigm	Ontology	Epistemology	Methodology	Methods of data collection and analysis	Report/writing style
Objectivism Positivism	The life world of subjects can be discovered in an objective manner	Interpretation arises from the observation of the researcher. With the right methods meaning can be discovered	For example classic ethnography and phenomenology	For example participant observation and interviewing	Description of day-to-day events experienced in the field, realist tales in an authorial, supreme voice to represent and interpret the other's story
Interpretivism Modernism Realism	The real world can be discovered by means of a systematic, interactive methodological approach	Knowledge arises from the understanding of symbols and meaning (symbolic interactionism)	Grounded theory	Data are gathered by means of participant observation, human documents and interviewing, and are analysed systematically	The researcher provides insights into the behaviour displayed and the meanings and interpretations that subjects give to their life worlds
Constructivism Postmodernism Impressionism	There is no real world or truth out there, only a narrative truth. Reality can thus only be known by those who experience it personally	Those who are personally experiencing it construct knowledge through a process of self-conscious action	Newer forms of ethnography: auto-ethnography, collaborative inquiry (PAR), appreciative inquiry, personal–reflexive ethnography, narrative inquiry	Interviewing, participant observation, human documents, personal narratives, lived experience, poetic representations and fictional texts	The story must be lifelike, evocative, believable and possible to enable readers to put themselves in the place of others and have empathy

Source: Adapted from Schurink (1998: 246–247)

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defined positivist, postpositivist, humanistic, and naturalistic conceptions of human experience and its analysis (Denzin & Lincoln 2000: 1048).

The qualitative paradigm consequently has splintered into various directions which have brought growing pains in discovery and rediscovery. Moreover, qualitative research is constantly in flux and changing. It is clear that, as we strive to make sense of the social world and create new knowledge or revisit what we know, new research perspectives will evolve in an effort to answer the unanswered philosophical questions related to the representation of the "other" (see Schwandt 2007: 213–215 for a fuller discussion of "other").

4. TYPES OF RESEARCH DESIGN

As outlined in a previous chapter, the various designs used by qualitative researchers will differ depending on the purpose of the study, the nature of the research question and the skills and resources available to the researcher. However, as each of these designs has its own perspective and procedures, the research process will also reflect the procedures of the chosen design.

The qualitative research design differs inherently from the quantitative one in that it does not usually provide the researcher with a step-by-step plan or a fixed recipe to follow. In quantitative research the design determines the researcher's choices and actions, while in qualitative research the researcher's choices and actions will determine the design or strategy. Put more simply, qualitative researchers will, during the research process, create the research strategy or design best suited to their research, or even design their whole research project around the strategy selected.

Those undertaking qualitative studies thus have a baffling choice of design. As Denzin and Lincoln (2000) explain, these different approaches should be viewed against the background of a complex historical field that crosscuts various historical moments. This has led to the continuous creation of new spaces, new possibilities and new formations for qualitative research designs (Denzin & Lincoln 2000). Tesch (1990) provides a popular classification of qualitative methods of inquiry which identifies 28 different approaches. Miller and Crabtree (1992) identify 18 types, using a different system of classification, while many other authors merely assess a single tradition (Yin 2003; Goodley & Moore 2004; Bryant & Charmaz 2007). Creswell (1998, 2007) identifies only five traditions of qualitative inquiry, selecting those which, according to him, represent different disciplines, have detailed procedures and, most importantly, have proved to be popular and frequently used. These include narrative research, phenomenology, grounded theory, ethnography and case study. A version of the same traditions are presented by Schram (2006), with specific attention to narrative inquiry, by Denzin and Lincoln (2000) in a description of moments in qualitative research, and by Flick (2006) as schools of qualitative research. For the same reasons as outlined by Creswell (2007), five research designs are selected for discussion in this chapter:

- Narrative biography
- Ethnography

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- Phenomenology
- Grounded theory
- Case study

Like Creswell, we acknowledge the existence of many other valuable designs, but regard the above as the most important ones for the applied human sciences.

4.1 Narrative biography

Narrative-biographical designs refer to both product and process (Schwandt 2007). This approach is based on the assumption that the life world of a person can best be understood from his or her own account and perspective, and "thus the focus is on individual subjective definition and experience of life" (Schwandt 2007: 22). However, since an individual is part of a social and cultural world, narrative or biographic approaches seek to interrelate these two worlds.

Creswell (2007) uses the term *biography* to indicate the broad genre of biographical writings. These forms of research vary from life stories, life histories, narratives, autobiographies and auto-ethnographies. However, all of these forms have something in common, namely to construct the history of a life (the unfolding of an individual's experiences over time). More recently (1995–2000), authors such as Carolyn Ellis and Arthur Bochner (1996) have started to experiment with novel forms of expressing lived experience, including literary, poetic, autobiographical, multivoiced, conversational, critical, visual performative and co-constructed representations that blur the boundaries between the social sciences and the humanities. This period is defined and shaped by the postmodern tradition and is strongly influenced by the assumption that the qualitative researcher cannot capture lived experience directly. Scholars increasingly believe that data should not be interpreted or analysed (Denzin & Lincoln 2005). Rather, the researcher should gather and present data in such a way that "the subjects speak for themselves".

The methods of data collection in this design are primarily personal narrative interviews and may incorporate personal documents (such as letters and diaries) with a detailed picture of an individual's life being the product of the research. According to Flick (2006), the main challenge of a narrative design is generating a question that will allow a narrative to develop that is not interrupted or obstructed by the interviewer. After determining whether the research problem or question does indeed best fit the narrative design, Creswell (2007: 55–57) outlines the procedures for conducting narrative research as follows:

- Select one or more individuals who have stories of life experiences to tell and spend considerable time with them gathering their stories through multiple types of information source.
- Collect information about the context of these stories so as to situate them in a clear personal, cultural or historical context.
- Analyse the stories with the aim to "restory" (the process of reorganising the story into a new framework). The researcher needs a keen eye for determining the particular content or angles that "work" in writing such a narrative biography.

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- Negotiate and incorporate the relationship between the researcher and the researched so as to capture the story of "individuals unfolding".

The aim of the narrative biographic research design conducted by Bester (2007) was to explore and describe a military attaché's wife's social construction of expatriate adjustment. Information was collected from the subject by means of a solicited essay. This essay served as a guideline for extensive interviews that followed with the subject. As Bester (2007) states, a story on a "slice" of the subject's life was compiled by means of the meaning she attached to her experiences and thus to social reality. This yielded a life history with rich descriptive data. A clear understanding of the personal, cultural and historical context of the subject was provided, namely that of a middle-aged woman who grew up in a totally different culture at a specific historical time. Bester managed to "restory" by telling the slice of the story that provided a true reflection of a South African expatriate's spouse's life as reflected through her essay and the interviews. In the construction of the subject's story, Bester (2007) reflects on what he calls his own "slice of life" or personal views and critical reflections of the five years that he was engaged in this research. This captures the story of "individuals unfolding" and in many ways reflects an auto-ethnographic writing style (Ellis 2004), presenting an evocative narrative. As Bester (2007) concludes:

> What was initially a journey in search of one woman's experience of expatriate adjustment as the spouse of a military attaché in India turned out to be much more than that. It turned out to be a life experience, during which I explored new ways of thinking, writing, abstracting and making sense. This "sense-making" was not only about the data, but also about life (Bester 2007: 140).

For more information on this design, consult Andrews et al. (2004), Clandinin and Connelley (2000), and Cortazzi (2002).

4.2 Ethnography

Ethnography originated from studies in anthropology. The first period in the development of qualitative research began at the end of the 19th century and continued until World War II. Researchers such as Malinowski, Margaret Mead and Radcliffe-Brown employed classic ethnography to study everyday human behaviour (Denzin & Lincoln 2005). These strategies were characterised by observation (participant observation) and description of the actions of a small number of subjects and the meanings that they attached to their actions. According to Flick (2006), ethnography has replaced studies using participant observation and is characterised by an extended participation in the field, employing all sorts of methods. The most prominent feature of ethnographic studies is describing and interpreting cultural behaviour (Schwandt 2007).

Creswell (2007: 242) defines ethnography as the study of an intact cultural or social group (or an individual or individuals within that group) based primarily on observations over a prolonged period of time spent by the researcher in the field. After the researcher has located a culture-sharing group, cultural themes or issues

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to be studied about the group will be selected (Creswell 2007: 73). The ethnographer listens and records the voices of informants where the interaction happens, with the intention of studying the cultural concepts and generating a cultural portrait. From the analysis of this data, a descriptive and interpretive, holistic cultural portrait of the group emerges as the final product of the study. Rubin and Babbie (2001: 391) state that a good ethnographic study will give one an intimate feel for the way of life observed by the ethnographer. However, Flick (2006: 230) warns that the interpretation of data and questions of authority and authorship in the presentation of results must receive attention, as this approach may be interpreted (in a positive way) as showing flexibility towards the subject under study.

Data analysis is mainly interpretive, involving descriptions of the phenomena. The main aim is to write objective accounts of lived experiences (fieldwork experiences). The aspirant researcher should be acutely aware of the fact that ethnographic fieldwork is not a straightforward, unproblematic procedure whereby the researcher enters the field, collects the data and leaves it unscathed. In fact, this type of fieldwork should rather be compared to a journey into a minefield riddled with potential moral and ethical pitfalls.

Traditional qualitative researchers wrote "objective" accounts of field experiences mirroring positivism. "They were concerned with offering valid, reliable, and objective interpretations in their writings. The 'Other' whom they studied was alien, foreign, and strange" (Denzin & Lincoln 2005: 15). It is clear that considerable confidence was put on the researchers' integrity rather than applying rigorous procedures. This traditional period has, however, fallen into disrepute because of accusations against ethnographers of supporting objectivism, complying with imperialism, believing in monumentalism (i.e. that ethnography would create a museum-like picture of studied cultures) and believing in timelessness (i.e. that what was studied would never change). An important aspect of classic ethnography, which is still found today, is its interpretive methodology, which maintained the centrality of the narrated life history approach. This was established by the Chicago school, which emphasised the life story and the "slice-of-life" approach. "This led to the production of texts that gave the researcher-as-author the power to represent the subject's story" (Denzin & Lincoln 2005: 21–22).

Recent developments in ethnographic design were fuelled by the postmodern period (1990–1995). New ways of composing ethnography were explored, and researchers experimented with different types of research account to represent the "other" (Ellis & Bochner 1996; Ellis 2004). Furthermore, as Denzin and Lincoln (2005) state, the tendency had arisen to abandon the concept of the aloof observer. Consequently, theories were written in narrative terms as "tales of the field", and the search for grand narratives was replaced by more local, small-scale theories fitted to specific problems and particular situations. Action, participatory and activist-orientated research came to the fore. Today people no longer live in small self-contained, localised communities but are part of extended global networks facilitated by advanced communication, transportation and technology. The development of a global society necessitated changes in the method of ethnographic research to include virtual communities of the cyberspace (Angrosino 2007).

The main features of ethnographic research as outlined by Luders (in Flick 2006: 227) include in the first instance the moments of the research process that

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SECTION **D**

cannot be planned and are situational, coincidental and individual, and then the researcher's skilful activity in each situation, eventually transforming into a strategy which includes as many options for collecting data as can be imagined and are justifiable.

Meyer-Adams (2008) applied a modernist case study design to explore and describe the subjective experiences and viewpoints of administrative personnel (as the culture-sharing group) on the student registration process in a newly merged South African university. Time was spent in the designated registration areas of each campus, interacting with employees and students, and observing interactions between administration personnel and customers (students, parents and members of the community). These observations and discussions were recorded as field notes which consisted of detailed descriptions of events written shortly after leaving the field. By writing field notes the researcher could reflect and thus think clearly and critically about the particular observations, what exactly happened, where and when events took place, who the actor or actors were, and how they experienced events. Compiling field notes also assisted her in relating occurrences or cultural concepts such as words, expressions, interactions and social processes to people, as well as events, other occurrences and the values and norms of the particular group of people. Discovering such linkages was important in shaping the "cultural portrait" and deciding which further selection to make regarding theoretical incidents and subjects. The writing up and analysis of these notes formed the backbone of the natural history or internal audit of the research process. Data were analysed by searching for patterns to paint the most realistic picture of the group under study.

For more information on this design, consult Agar (1996), Atkinson, Coffey and Delamont (2003), Atkinson and Hammersley (1994), Wolcott (1999), and Zou and Trueba (2002).

4.3 Phenomenology

Phenomenology originated from the work of Alfred Schutz who aimed to explain how the life world of subjects is developed and experienced by them (Scwandt 2007). Life world refers to a person's conscious experience of everyday life and social action. This approach aims to describe what the life world consists of, or more specifically, what concepts and structures of experience give form and meaning to it (Schram 2006). The researcher therefore strives to describe the phenomenon as accurately as possible, refraining from any pre-given framework, but remaining true to the facts (Thomas 2004). As opposed to a narrative biography that reports the life story of an individual, Creswell (2007: 57) regards a phenomenological study as a study that describes the meaning of the lived experiences of a phenomenon or concept for several individuals.

At the root of phenomenology is the intent to understand the phenomena under study on their own terms and therefore to provide a description of human experience as it is experienced by the subjects (Bentz & Shapiro 1998: 96) allowing the essence to emerge (Cameron, Schaffer & Hyeon-Ae 2001). The product of the research is a careful description of the conscious everyday experiences and social action of subjects. In order to accomplish this, researchers should be able to turn from things to their meaning. This is mainly done by means of naturalistic methods

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of study (such as recording everyday conversations), without using explicit reconstructing methods such as interviews. Researchers must also be able to distance themselves from their judgements and preconceptions about the nature and essence of experiences and events in the everyday world (Schram 2006). Data are often presented in relatively raw form to demonstrate their authenticity.

A later development originating from phenomenology is Garfinkel's (1967) ethnomethodology where the focus is placed on how people accomplish the interactions we take for granted in everyday life; thus the ways that various aspects of the life world are produced, experienced or accomplished interactionally and discursively (Schwandt 2007). This development is seen by Flick (2006: 22) as the empirical study of mundane practices through which interactive order is produced. Ethnomethodology requires the researcher to view social life in an unbiased, open-minded way and thus to "bracket" his or her own knowing of how encounters are socially structured or accomplished in order to describe the way members in a specific setting accomplish their own sense of structure (Schwandt 2007). This "bracketing" leads the researcher to re-engage with a diverse array of things, topics or ideas that are usually taken for granted in the studying of social phenomena. As Rapley (2007: 131) so eloquently states: "You can begin to look in wonder (and sometimes horror) at the bizarre and wonderful ways we produce social life."

Conversation analysis has developed out of ethnomethodology, and both these have been core in the development of conversation analysis and discourse analysis, which are aimed at the content analysis of real and authentic everyday language rather than the analysis of texts produced for research (such as transcriptions from interviews). Discourse is one of the many procedures employed in textual analysis. It is broadly understood as the study of language as it actually occurs in specific communicative contexts (Schwandt 2007). Analysis is focused on both the contents of conversations and the procedures through which they are communicated. The range of sources of potential materials to analyse is extremely wide, namely official documents, statutes, political debates, all types of media output, casual conversations, talk in the workplace and interviews (Rapley 2007).

Analysing discourse is currently one of the major approaches in qualitative research (Rapley 2007). Here, data collection is focused on creating material by recording naturally occurring interactions or selecting unsolicited documents such as newspaper articles, files, etc. Traditional methods of data collection where data are produced especially for the research, such as in-depth interviews or focus groups, play a less important role (Rapley 2007). It is rather the way existing materials (including visual materials) are used for research purposes and made up by the researcher that is important (Rapley 2007).

An example of a study utilising phenomenology is that of Groenewald (2003), who conducted research on cooperative education, which, based on his experience and literature review, he found to be often misunderstood or poorly practised. A phenomenological approach provided him with a suitable research strategy that helped him to restrict or "bracket" his biases as well as those of the subjects and to do the research in an open-minded way. Following this research strategy, his questions were directed at the meaning of participants' experiences, feelings, beliefs and convictions about the theme in question. The epoché in this study entailed asking the participants/informants to set aside their experiences about the collaborative

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educational programme and to share their reflection on its meaning. He also set aside (bracketed) his own preconceptions in order to enter the participants' life world and to make sure that he did not influence the subjects in any way. This enabled him to interpret the essence of the subjects' experiences, refraining from any pre-given framework and remaining true to the facts.

For further information on phenomenology consult Benner (1994), Cohen and Omery (1994), Giorgi (1997), Holstein and Gubrium (1994), Seidman (1998), and Van Maanen (1997).

4.4 Grounded theory

The aim of grounded theory is, simply put, to develop a substantive theory that is grounded in data (Schram 2006). Rather than being an actual theory itself, grounded theory focuses on generating theory based on the study of social situations. Schwandt (2007: 131) emphasises the fact that grounded theory is "a specific, highly developed, rigorous set of procedures for producing formal substantive theory of social phenomena". A distinction is made between substantive and formal theory. A *substantive theory* is a description and abstraction of what goes on in a particular kind of social setting, for example hospital wards with dying patients. Analytic abstractions are used in discussing such settings, but no claim is made that the abstractions apply to other situations (Schwandt 2007). In *formal theory,* abstractions and hypotheses about the relationships among these abstractions are developed. These hypotheses should then explain phenomena in many kinds of setting. Formal theory is concerned with a conceptual area of study, such as deviant behaviour or organisational theory.

Schwandt (2007) emphasises that, in the development of theory, grounded theory simultaneously employs techniques of induction, deduction and verification or validation (as discussed in Chapter 3). In this way, data generate insights, hypotheses and generative questions that the researcher follows up through further data generation that leads to tentative answers to questions and the construction of concepts which are verified by means of further data collection. According to Creswell (2007: 239), the researcher in this type of study generates an abstract analytical schema of a phenomenon, that is, a theory that explains some action, interaction or process.

Grounded theory was developed by Glaser and Strauss (1967) and is based on two concepts, namely constant comparison and theoretical sampling (Suddaby 2006). The constant comparison method refers to the iterative process of comparing data incidents and categories continuously and repetitively with one another during the stages of data analysis which are in operation simultaneously throughout the analysis. This means that grounded theory employs the method of constant comparison where the new data gathered, actions observed and perceptions recorded of the subjects are constantly compared with those of new subjects in order to generate theory. The researcher thus constantly asks: "How does what I already have differ from what I now found?" The aim of constant comparison is to look for similarities and differences in the data. From this process the researcher identifies underlying uniformities in the indicators or incidents (actions, events, perspectives) and produces a coded category or concept. These categories are compared with one another

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and with new incidents to sharpen the definition of the concept and to look for possible new categories. Categories are then clustered together to form themes. Theories are formed by proposing plausible relationships between themes. Tentative theories are further explored through additional instances of data and tested by means of theoretical sampling. Theoretical saturation is reached when no new categories emerge (Schwandt 2007).

Charmaz (2006) explains that the testing of the emergent theory is guided by theoretical sampling. Theoretical sampling means seeking pertinent data to develop an emerging theory. The main purpose of theoretical sampling is to elaborate and refine the categories constituting a theory. Strauss and Corbin (1990: 23) comment further that a grounded theory is discovered, developed and provisionally verified through systematic data collection and the analysis of data pertaining to that phenomenon. Therefore, data collection, analysis and theory stand in a reciprocal relationship with one another. Researchers do not begin with a theory, then prove it; rather they begin with an area of study, and what is relevant to that area is gradually allowed to emerge. A systematic set of procedures is used for data collection and analysis. Data are collected by means of interviews with individuals who have participated in a process about a central phenomenon in order to “saturate” categories and detail a theory. Analysis takes place through open, axial and selective coding in an attempt to deliver a theory or a theoretical model as the product of the research. A grounded theory is one that is systematically developed from the data inductively derived from the study of phenomena.

Extending through the post-war years, the 1970s and the mid-1980s, to the work of many contemporary qualitative scholars, grounded theory is part of the phase described by Denzin and Lincoln (2005) as the modernist phase. Modernism is characterised by the interpretation of reality by means of formalised qualitative methods and rigorous data analysis (e.g. analytic(al) induction and grounded theory). Examples of this perspective include the symbolic interactionist perspective as reflected in the well-known textbooks and works of, among others, Filstead (1970), Bogdan and Biklen (2007), Taylor and Bogdan (1998), Glaser and Strauss (1967), and Lincoln and Guba (1985). Methods of data collection vary from interviewing and participant observation to the study of human documents. Knowledge is built by analysing symbols and meaning.

Suddaby (2006) outlines several *misconceptions* derived from the common errors researchers make in conducting and presenting grounded theory. This author states that *grounded theory is not*

- an excuse to ignore the literature
- the presentation of raw data
- theory testing, content analysis or word counts
- simply routine (mechanical) application of technique to data
- perfect (it is inherently “messy”)
- easy (it is inherently the product of considerable experience, hard work and creativity)
- an excuse for the absence of a methodology.

The study of Barnard (2008) serves as an example of a grounded theory design. The study aimed to derive new insights into and understanding of the experience and

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meaning of integrity and integrity development in the context of the South African workplace. More specifically the study conceptualises the construct of integrity in order to provide a new way of looking at integrity in the workplace. Being a grounded theory study the researcher's interpretations and findings had to be grounded in the participants' social reality in order to present a valid reflection of the phenomenon of integrity.

Throughout her research, Barnard (2008) used the constant comparative method introduced by Glaser and Strauss (1967) to generate and analyse the data. It was only through the continued naming of categories by adding additional transcribed interviews and by moving to the next step of comparing data incidents with the conceptual categories already identified, thus using the constant comparative method of analysis, that categories could be integrated and refined. The number of categories decreased as Barnard (2008) continued to analyse new transcriptions and started conceptualising them by studying their properties. Theoretical saturation was reached when no new categories emerged. More detail about the process of analysis in Barnard's study will be discussed in Chapter 24 in the context of data analysis and interpretation. Through an onerous process of analysis and interpretation, she identified and conceptualised five core themes which she believes provided a presentation of the construct of integrity in the South African work context. An explication of the interrelationships between the core themes resulted in a conceptual framework of integrity and integrity development. The conceptual framework shows the core themes, their related primary categories as well as the properties of each category. Barnard found the themes, categories and their properties in the conceptual framework to be descriptive of integrity and integrity development in the South African work context and a basis for a substantive model of integrity in the South African work context.

For further information and clarification on grounded theory, consult Bogdan and Biklen (2007), Charmaz (2006), Clarke (2003), Glaser (1978, 1992), Piantanida, Tananis and Grubs (2004), and Strauss and Corbin (1998).

4.5 Case study

In contrast to other methodological frameworks, case study design is more of a choice of what to study than a methodological one. This assumption becomes clear by looking at its ability to adapt to a wide range of methodological frameworks such as life history, phenomenology, grounded theory and ethnographic research. However, "whether you consider case study as a way of conceptualizing human behaviour or merely as a way of encapsulating it, its strategic value lies in its ability to draw attention to what can be learned from the single case" (Schram 2006: 107).

Since qualitative researchers are primarily interested in the meaning subjects give to their life experiences, they have to use some form of case study to immerse themselves in the activities of a single person or a small number of people in order to obtain an intimate familiarity with their social worlds and to look for patterns in the research participants' lives, words and actions in the context of the case as a whole.

Babbie and Mouton (2001) write as follows about the unclear origins of the case study:

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> Some authors have traced it back to Bronislaw Malinowski in anthropology and Frédéric Le Play in French sociology, while others have nominated the members of the Chicago School in North American Sociology ... as the real pioneers in the use of case study methods. ... Small cases were studied by members of the Chicago School, who were interested mainly in unemployment, poverty, delinquency and violence among immigrant groups shortly after their arrival in North America. After this, the Chicago School was soon considered the leaders in the field of the case study approach, with members including Ernest W. Burgess, Herbert Blumer, Louis Worth, Robert Redfield, and Everett C. Hughes.

Becker (1961) and his co-workers in their study *Boys in white*, provide one of the best examples of the use of the case study in qualitative research of the modernist variety. *Casing* recently experienced a revival, particularly because of the heightened interest in qualitative research.

According to Creswell (2007: 73), a case study involves an exploration of a "bounded system" (bounded by time, context and/or place), or a single or multiple case, over a period of time through detailed, in-depth data collection involving multiple sources of information. As pointed out by Babbie (2001: 285), there is little consensus on what constitutes a case or "bounded system" in Creswell's term. The case being studied may refer to a process, activity, event, programme or individual, or multiple individuals. It might even refer to a period of time rather than a particular group of people. The exploration and description of the case takes place through detailed, in-depth data-collection methods, involving multiple sources of information that are rich in context. These may include interviews, documents, observations or archival records. As such, the researcher needs access to, and the confidence of, participants. The product of this research is an in-depth description of a case or cases, and case-based themes. The researcher situates this system or case within its larger context, but the focus remains on either the case or an issue that is illustrated by the case (Creswell 1998: 61). This implies, Babbie (2001) points out, that case study researchers, in contrast to grounded theorists, seek to enter the field with a knowledge of the relevant literature before conducting the field research.

The following types of case study can be identified:

- The *descriptive* case study, also called the *intrinsic* case study, that strives to describe, analyse and interpret a particular phenomenon (Yin 2003). Extreme or unique cases may occur that justify a study in its own right. In this regard an intensive study of one instance or a small number of instances is undertaken in order to produce detailed descriptions of these cases (Thomas 2004). The purpose is not to understand a broad social issue, but merely to describe the case being studied (Mark 1996).

- The case study used for *explanatory* purposes, also called the *instrumental* case study (Mark 1996). The purpose of this type of case study is both theory building and testing. Case studies can be particularly useful for producing theory and new knowledge, which may inform policy development. Since casing involves a detailed investigation of a complex entity or process, it can generate theoretical insight closely grounded in real experience in contrast to what Thomas (2004) refers to as more speculative "armchair" theorising. Here the case study serves

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SECTION
D

the purpose of facilitating the researcher's gaining of knowledge about the specific social issue. The case study can also be used for theory testing or, more specifically, critical testing a theory's proposition (Yin 2003). The focus is on furthering the understanding the researcher about a general phenomenon or condition (Mark 1996), for example where the theory or competing theories must predict the characteristics and/or behaviour of a specific person or instance. In this regard, therefore, the study of a single case may be used to support the theory, or extend or refute it (Thomas 2004).

- The *collective* case study is an instrumental case study extended to a number of cases. Cases are chosen so that comparisons can be made between cases and concepts and in this way theories can also be extended and validated (Mark 1996).

It should be noted that in practice, as in the case of the difficulty in choosing one specific type of research design, it is also not as easy as it seems to keep to one specific type of case study design. In fact the different types of case study design more than often overlap, as indicated by Tlou (2006: 39), who made use of the case study method to explore the unknown social world of gay leadership in the local defence force. She states: "I believe that the present case study reflects the characteristics of the **intrinsic case study** in order to highlight homosexual and leadership issues in the military context." However, as she correctly points out, her study also shares the features of the **instrumental case study** in its aim to explore and describe a particular subject (in this case a gay person who is holding a leadership position in the defence force) with the aim of gaining new knowledge, which may inform policy development.

Gummesson (2000) indicates that casing is becoming increasingly acceptable as a scientific tool in management research and has provided an important method if the researcher desires an in-depth understanding of mechanisms of change but is not in a position to study a large number of cases. Critics of case study methods include those who view qualitative research or a few cases as an inadequate or inappropriate strategy of inquiry. More particularly the debate has been focused on two main sets of issues, namely the extent to which casing can produce rigorous data and yield findings of high internal validity and the problem of generalisation or external validity (Thomas 2004). The latter has been regarded as the most problematic since the audit trail or natural history provided by the researcher could serve as proof of the necessary rigorousness of the research process. (See Chapter 24 for a discussion on related matters in the context of data analysis and interpretation.) According to Johnson (1997), the question of *generalisability* is particularly problematic for qualitative researchers because discussions about generalisability are informed by ontological and epistemological standpoint and methodological preference. The opinion that qualitative research is inherently ungeneralisable has been widely discussed. Regarding the use of a case study design, Stake (1995: 8) emphasises that the real business of a case study is particularisation, not generalisation. He further contends that

> ... we take a particular case and come to know it well, not primarily as to how it is different from others, but what it is and what it does. There is emphasis on uniqueness, and that implies knowledge of others that the case is different from, but the first emphasis is on understanding the case itself.

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From the above it is clear that placing a study within a research design or designing a study means that one situates it within a specific framework with interrelated assumptions, concepts, values and practices that comprise the way one thinks reality should be viewed (ontology) and studied (epistemology). However, deciding on a research design should not be seen as choosing from an array of available designs in much the same way as choosing a specific outfit. Research design should rather be approached as, for example, buying a dress from one shop, shoes from another and a handbag from yet another. Choosing just one design and sticking to it means that the chosen research design has to serve as an all-purpose vehicle suitable for any type of road. In reality the focus should be on the research question and the appropriateness of research design to clarify the research purpose and perspective (Flick 2007).

Bogdan and Biklen (2007: 55) write in this regard:

> How (qualitative researchers) proceed is based on theoretical assumptions (that meaning and process are crucial in understanding human behaviour, that descriptive data are what is important to collect, and that analysis is best done inductively), on data-collection traditions (such as participant observation, unstructured interviewing, and document analysis) and on generally stated substantive questions. In addition, all researchers bring their own specific backgrounds to a study. This often includes training in a particular field, knowledge of substantive topics, a particular standpoint, and theoretical approaches. This shapes what approaches are taken and what issues are focused on. These markers provide the parameters, the tools, and the general guide of how to proceed.

For more information on case studies, see Starke (2000) and Yin (2003).

5. FUNDAMENTAL ELEMENTS OF QUALITATIVE RESEARCH DESIGN

5.1 Methodological implications

The nature and importance of research questions have been discussed extensively in previous chapters and will not be repeated here. It is important to remember, though, that research questions form the backbone of a qualitative design (Mason 2002). It is of the utmost importance that the research questions, conceptual framework, design and methods are compatible. Researchers need to be clear about how and why a particular design, method and data source will assist in addressing research questions rather than assuming that a particular one will be emphatical enough to provide them with the information needed. In addition, they will have to specify what constitutes knowledge or evidence relevant to the intellectual puzzle and research questions (Mason 2002).

Researchers often embark on a project with better knowledge of and expertise in some data-collection methods and data sources than others, or with implicit or explicit preferences. It is advisable for qualitative researchers, regardless of what they believe their practical constraints are within the framework of their ontological and epistemological perspectives, to try to broaden their horizons by thinking as

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widely and creatively about possible sources of data and methods to select and use. Mason (2002) proposes that qualitative researchers generate a list or chart of possible options, which could be altered as the study proceeds. Such a list provides a good way for them to discipline themselves to see which options are ontologically and epistemologically inappropriate and appropriate for their studies. In addition, such a list could be talked through with a colleague or study leader/promoter, and could assist qualitative researchers to broaden their horizons and to become aware of other possibilities even if they are inappropriate for the study at hand. In short, creative thinking and/or using a list will help researchers to spot and eradicate inconsistencies between their perception of what particular methods can yield and what kinds of information are required to address the research questions of their studies.

Another related exercise researchers need to consider is how they are envisaging sorting, organising, indexing and analysing their collected data. There are various ways of making sense of *soft* data. While it is not the aim here to discuss these methods, as qualitative data analysis will be covered in Chapter 24, it is important to realise the logical connection between research questions and the design, data collection and data analysis decisions. While some protocol or format is necessary in qualitative research, such research design invariably needs to allow for a certain degree of flexibility. It is paramount that we allow questions to be asked about decisions as the research process proceeds and the particular social reality unfolds. Allowing for flexibility or unstructuredness in designing a particular qualitative study will naturally depend on the researcher's ontological and epistemological perspectives.

Researchers working with an ontological and epistemological model where theory is generated from empirical data, and where data are selected in the light of evolving theory, will not specify in advance all the detail decisions to be taken in their studies. In such studies it is useful for researchers to indicate in their initial designs that, since it is anticipated that there will be times or stages in the execution of the studies when further decisions will have to be taken, they need to indicate that several designs will be produced sequentially as their research strategies and practices evolve. Such designs provide researchers with opportunities to consider similar sets of questions at specific stages of the research, as well as to reflect on what they have achieved at these stages. Of course, postponing certain decisions until such points as researchers have the necessary materials or conditions to deal with them is not the same as failing to design their studies. The crucial point, as Mason (2002) points out, is that research strategy, and the logic and principles of the methodology need to be addressed right from the beginning. As indicated when the development of a proposal for a qualitative study was discussed, we need not always demonstrate that we have all the answers, but we certainly need to demonstrate that we are informed enough about all the factors to be taken into consideration to complete the project – particularly when the project proposes the use of unconventional or unknown methods or ventures into unknown territory.

Another decision researchers need to take at this juncture is to begin to develop their thinking on how – that is according to what principles and logic – they will formulate and substantiate their claims and analysis. Differently put, they should consider how they are going to ensure that they do quality research. It is crucial that these measures of quality are considered during the research design phase. They need to guide researchers in selecting appropriate methods and sources, and

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combinations of these, as well as other decisions that need to be taken. Since they form part of the decision-making process they cannot be reserved for a later phase of the research process; it is of crucial importance that they are addressed in the research design phase. If they are not, the researcher risks assembling an untidy bag of methods with little logic, and with little hope of sensibly integrating the products into a coherent analysis (Mason 2002).

As Flick (2007: 64) states, qualitative research, including research within a post-modernistic paradigm, should be developed and produced in the *tensional field of (theoretical, conceptual, practical and methodological) creativity and (methodological) rigour in studying phenomena.* Therefore, quality should be located between being rigorous and being flexible. To achieve this researchers need to ask questions concerning the issues of rigour and the authenticity or trustworthiness of their research at an early stage. For qualitative researchers engaging with difficult questions and issues in the reasoning process through which they arrive at their answers, it is today not only important to plan their studies properly, but also to provide a reflexive account of how they were done, for example constructing natural histories, research stories or internal audits, and/or defending the logic of their decisions. This also relates to questions about qualitative data analysis and interpretation as addressed in Chapter 24.

5.2 Entry and access in implementing the design

Successful execution of the design and data gathering is usually determined by the accessibility of the setting and the researcher's ability to build up and maintain relationships and agreements with *gatekeepers* and participants. This is more crucial in qualitative than in quantitative research. A gatekeeper is regarded as the individual with the formal or informal authority to provide approval for access to research groups, sites or participants. Once the researcher has located and established contact with *gatekeepers*, they must gain the person's cooperation, and this often involves bargaining and negotiating. Grinnell and Unrau (2005: 236) rightly point out that entry and access is more analogous to peeling away the layers of an onion than it is to opening a door. Identifying particulars that prove the researcher's credentials are vitally important in order to reassure a subject about the *bona fide* status of the researcher. Honesty and warmth are therefore important qualities for a researcher. The researcher should be able to convince *gatekeepers* of the sincerity of the intention to collect data in an objective manner. The aim and object of the proposed investigation, how it will be undertaken and the envisaged purpose of the results should be set out clearly. Practical aspects of the research such as data collection methods and recording of data should be discussed in detail (Bailey 2007).

Maxwell (2005) emphasises that the negotiating of research relationships is not merely a practical issue but forms an integral part of the research design. To assist the novice researcher in the reflection of research relationships, Maxwell (2005) suggests an exercise where the researcher answers the following questions:

> "What kind of relationships do you plan to establish with the people in the research setting?" "How did you negotiate these relationships or how do you plan to initiate and negotiate them?" "Why have you planned to do this?" "How will these relationships impact on your study?" "What alternatives do you have

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> and what are the disadvantages and advantages of these?" "How do you think you will be seen by people you interact with in the study?" "Will this affect your relationships with these people?" "What can you do to better understand and modify these perceptions?" "What explicit agreements do you plan to negotiate with participants about how the study will be conducted and how the results will be reported?" "What implicit understandings about these issues do you think the research participants and you will have?" "How will the implicit and explicit terms of the study affect your relationships and your research?" "Do any of these need to be discussed or changed?" "What ethical issues or problems do these considerations raise?" "How do you plan to deal with it?"

One of the most successful ways of gaining entry into a setting is to make use of indigenous people who are part of the setting to be studied. Thus, the best ticket into the setting, and sometimes the only ticket, is introduction by a guide or an informant.

Once the researcher has gained access to a setting the most pressing question is what should now be done to represent the subjects' interpretation of their world as they perceive it to be. Put differently: What should they listen and watch out for? Gaining an understanding of an insider world is by no means an easy task for an outsider (the researcher). It is widely believed that in order to understand people's life worlds the researcher needs to think in their symbols and that the data must therefore be collected in the subjects' own language and within their meaning systems – that is, values and norms (Shaffir & Stebbins 1991). Data collection, specifically in the beginning, involves participation in the daily life of the people being studied by observing things that happen and by listening attentively to what is said without saying too much (Shaffir & Stebbins 1991). As the research progresses, roles are shaped by the characteristics of the setting, so that the researcher and the subjects' responses to the researcher may influence the data. Kreuger and Neuman (2006: 159) stress the importance of context, in that the meaning of a social action or statement depends largely on the context in which it appeared, and it is important the researcher acknowledges this.

5.3 Practical considerations

In addition to the various design issues outlined in the preceding paragraphs there are obviously a number of practical matters that need to be considered when qualitative researchers design their studies. Mason (2002) believes that researchers should only consider practicalities after they have considered the intellectual and ethical issues since the research design should not be guided entirely by these considerations. She feels that it is advisable for researchers to adopt the rule of dealing with practical concerns in ways that are intellectually sound, even if practicalities mean that researchers cannot conduct their studies as they would like to do intellectually. Mason (2002) warns that the alternative is that researchers risk becoming overwhelmed by practical concerns, and neglect certain important intellectual considerations. Be that as it may, researchers need to plan carefully what can be achieved, given the resources available to them, such as time, money, equipment, transport, available data sources, own abilities, skills and need for training, and the

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likelihood of gaining access to key data sources. Researchers would be well advised to be realistic rather than optimistic when planning their studies since resources have a tendency to go less far than originally anticipated. Being compelled to budget assists researchers in focusing their mind on what their studies entail. The following two questions proposed by Mason (2002) seem to be helpful when considering practical considerations: What is possible given my resources? and What is the most sensible use of my resources in relation to my research questions?

SUMMARY

From the above it is clear that the qualitative research design differs inherently from the quantitative research design in that it does not provide the researcher with a step-by-step plan or a fixed recipe to follow. Unlike quantitative research, qualitative research is not a linear process and has no fixed design. In quantitative research the design determines the researcher's choices and actions, while in qualitative research the researcher's choices and actions will determine the design or strategy. Put more simply, qualitative researchers will, during the research process, create the research strategy best suited to their research, or even design their whole research project around the strategy selected. The process whereby qualitative research is designed follows a cyclic path in order to allow for critical reflection on one stage before proceeding to the next. Because the qualitative research design is flexible, a full account of the research design can only be provided in retrospect.

While it is emphasised that no standard format can be set for designing qualitative research, some key ideas and suggestions are presented that provide qualitative researchers with a framework to develop good imaginative designs. Qualitative researchers typically employ a wide range of strategies or frameworks of inquiry from which the researcher should make a selection. Each of these strategies has its own philosophical–theoretical assumptions or paradigm and methods of data collection and analysis.

At an early stage of the research, qualitative researchers need to prepare themselves emotionally and intellectually to undertake fieldwork. Important decisions need to be taken on how they should go about entering the research setting; how permission to enter should be obtained from the gatekeepers; how a relationship could be formed between the researcher and the subjects; what role the researcher should play; and how the data may be recorded.

Self-evaluation and group discussion

- Each foundational question could be answered differently depending on your ontology (how you see reality) and epistemology (how you think social phenomena should be studied). Consider your ontology and epistemology in order to enrich your understanding of the design you have selected.
- Match your research problem or question to five main qualitative designs in order to determine which design offers the best fit.

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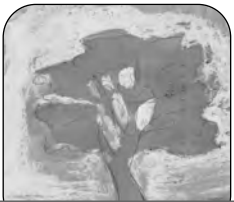

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H STRYDOM

Information collection: participant observation

Learning objectives

Studying this chapter should enable the reader to

- discover the meaning of the applicable concept of participant observation
- study the characteristics of this research procedure
- consider the process of participant observation
- evaluate the advantages and disadvantages of participant observation.

1. INTRODUCTION

Participant observation has a very long history. It has already been described as fundamental to all research methods (Denzin & Lincoln 2000: 673). Participant observation came into its own and achieved real standing late in the 19th and at the beginning of the 20th century in European and American anthropological research (Denzin & Lincoln 1994: 248–261). However, participant observation has to a large extent been neglected by health professionals and utilised mainly by sociologists and anthropologists. This chapter will endeavour to show that health professionals can use this procedure with a great deal of success.

The applicable concepts for participant observation will be studied with particular emphasis on the various ways in which a researcher can be involved in the continuum ranging from total involvement on the one hand to entire observation on the other. The researcher will have to decide beforehand on the role he or she intends to take in the inquiry, since this decision will affect the entire process of participant observation. The characteristics and the process of this procedure will be discussed in order to clarify the methodology of participant observation. In the final section of this chapter the advantages and disadvantages of participant observation will be evaluated.

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2. DEFINITION OF TERMINOLOGY

McBurney (2001: 215–222) and Mitchell and Jolley (2001: 441) distinguish between naturalistic and participant observation, although they call both *observational research*. Gravetter and Forzano (2003: 164) and Jackson (2003: 50) focus on naturalistic observation and say that in this manner the researcher can observe natural or true behaviours from afar. Babbie and Mouton (2001: 293); Bless, Higson-Smith and Kagee (2006: 114–115) and Ginsberg (2001: 33) distinguish between simple (non-participant) observation, and complex (participant) observation, which represent the extreme points on the continuum of roles to be assumed by the researcher. Jackson (2003: 50–51) mentions the terms *disguised* and *undisguised observation*, referring to non-participant and participant observation respectively.

For the purposes of this chapter, the term *participant observation* rather than simply *observation* is used, since all forms of observation are basically similar and depend to a greater or lesser extent on participation, thus necessitating direct contact with the subjects of observation (Denzin & Lincoln 1994: 378; Sarantakos 2000: 207–208). Participant observation may be regarded as a research procedure that is typical of the qualitative paradigm, which implies that data cannot really be reduced to figures.

It is generally assumed that the real world of the participants of a research project can only be understood if the words and expressions they use in specific situations are revealed. People's conceptions of reality are not directly accessible to outsiders and, therefore, methods are required to unravel and capture these viewpoints as accurately as possible (Schurink 1998: 279–280). In the observation of participation the emphasis is thus both on one's own participation and that of others. This is thus a procedure of recording and observing conditions, events, feelings, physical settings and activities through looking rather than asking (Denzin & Lincoln 2000: 673; Walliman 2006: 95).

Royse (2004: 237) suggests that the researcher literally walks in the shoes of the participant by, for instance, living in the hostel where street people live or helping to prepare the food for the luncheon club for the disadvantaged aged.

Alston and Bowles (2003: 196), Dane (1990: 158–160), Gravetter and Forzano (2003: 462) and Marlow (2005: 338), suggest that researchers become part of the situation and submerge themselves in order to become part of the group, but at the same time nothing should be changed in that situation. The mere presence of the researcher will in itself alter the situation, meaning that it is no longer the original and natural set-up under observation. Muller (1995: 65) and Sheppard (1995: 270) state that the researcher should be actively involved in the daily situation of respondents while observing their behaviour and what is transpiring, making field notes and recording actions, interactions and events in an unstructured or semi-structured manner (Creswell 2003: 185–188; Druckman 2005: 235; Ritchie & Lewis 2003: 35). In this way phenomena can be studied as they arise and additional insights can be gained.

Serendipity is important in participant observation. Often field researchers do not know the relevance of what they are observing until later. Thus keen observation, excellent notes, looking back over time and learning to appreciate the value of waiting become relevant and important (Neuman 2003: 382). The degree of involve-

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ment, from complete participant to complete observer, is thus one of the crucial factors to be considered when doing participant observation (Babbie 2001: 278; Williams, Tutty & Grinnell 1995: 266–267).

The development of a comprehensive and holistic view of a particular group can take time, anything from a few months to years (Schurink 1998: 281). Barker (2003: 316) supports the notion of becoming involved as far as possible with the group being studied, but emphasises that this is limited – the degree of involvement depends to a large extent on the objectives of the study, available resources and the needs of the fieldworkers. Sometimes the objectives might be of such a nature that being involved would not really matter as far as the objectives are concerned. In cases of more sensitive issues, perhaps, the researcher will have to take a more – or even totally – unobtrusive role in order to achieve the objectives of the study.

For the purposes of this chapter, the following definition of the concept of participant observation is suggested: Participant observation can be described as a qualitative research procedure that studies the natural and everyday set-up in a particular community or situation. As mentioned before, researchers should decide beforehand on the role they intend to take in the situation of a participant observer, since such roles can be placed on a continuum from complete observer to complete participant with a variety of degrees of involvement in between. Whatever the role of the researcher, it entails certain advantages and disadvantages. While doing the research, the researcher should make field notes, which should be written up as well-formulated reports at the first available opportunity. These should be included in the final and formal report on the study.

3. CHARACTERISTICS OF PARTICIPANT OBSERVATION

The following may be regarded as the most important characteristics of participant observation:

- The phenomenological approach is important in participant observation, as the researcher endeavours to gain an in-depth insight into the manifestations of reality; this usually takes place over a long period of time (Druckman 2005: 235). Participant observation is thus anti-positivistic inasmuch as this procedure does not aim at measuring in numbers or deriving rules for behaviour (Coertze 1993: 69).
- The focus is on the everyday and natural experiences of the respondents. The researcher should strive at all times to gain feelings and impressions, and experience the circumstances of the real world of participants by living alongside them, and by interpreting and sharing their activities (Gravetter & Forzano 2003: 164; *New dictionary of social work* 1995: 43; Royse 1995: 286). Bryman (2000: 96) adds: "For qualitative researchers, it is only by getting close to their subjects and becoming an insider that they can view the world as a participant in that setting."
- In order to be able to ascertain the real meaning of people's behaviour in particular situations, it is of the utmost importance for the researcher to study and know the customs, lifestyle and cultural contexts of the respondents in a culture-sensitive manner (Sheppard 1995: 270).

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- In participant observation the researcher endeavours to become part of the life and daily routine of respondents.
- This procedure endeavours to let the researcher play the dual role of data collector and interpreter of the data (Coertze 1993: 77).
- The particular role that the researcher will take is of the utmost importance. The observer's involvement varies from no participation to full participation (Sarantakos 2000: 208). On the other hand, if people know that they are being observed and studied, the natural situation is automatically changed and the researcher will not be able to achieve the purposes of the study objectively. The researcher has a dual role in participant observation and must attempt to mentally operate on two different levels, namely to become an insider while remaining an outsider.
- Participant observers do not generally test predetermined ideas and do not develop hypotheses prior to the inquiry. Instead, an open-ended and naturalistic approach is followed (Schurink 1998: 282).
- As a participant observer, the researcher becomes part of the situation being observed and even contributes to it (Graziano & Raulin 2000: 131).
- To be able to listen, to see, to inquire, to observe and to write up the notes is of special significance in participant observation. All the senses are used in participant observation, and the researcher should become an instrument that absorbs all sources of information (Neuman 2000: 361). It is better to take a passive rather than an assertive role in participant observation, but interest should still be shown in the informant.
- Reliability and validity can become serious concerns for the researcher engaging in participant observation. It is impossible to arrange for exactly the same situation in order to reach the same results as in the original study and therefore reliability is hard to achieve.
- It is important to have the minimum structure in studies of this nature in order to keep the situation as natural as possible. This may conflict with the rules of science.
- Participant observation focuses on explaining the natural occurrence of a phenomenon and thus the results may be of a high standard.
- The results of such a study may be of particular practical importance for society at large.
- Since the researcher is involved with a particular situation over a period of time, the scientific notion of objectivity may become a special problem.

4. PROCESS OF PARTICIPANT OBSERVATION

The steps in the process of participant observation are of a more holistic nature and are more intertwined than those of quantitative research (Druckman 2005: 236–253; Grinnell & Unrau 2005: 236–243; Monette et al. 2005: 228–232). For practical reasons the process is delineated in the steps that follow:

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SECTION D

4.1 Problem definition and objectives of the study

Every researcher will come into the research process with his or her own personal feelings and perceptions about the research. As soon as the researchers gain clarity about the problem to be investigated, they should formulate the problem in precise terms in order to make it a workable proposition. A thorough literature review should now be embarked on in order to facilitate the delineation of the project (Thomas & Smith 2003: 159). The problem statement should be refined into a couple of research questions that should lead to the objectives and goals of the study. At this stage researchers should already be alert to subjectivity and their own interpretation of this personal situation in particular.

4.2 Selecting the research field

The choice of the problem is automatically linked directly to the particular field in which the inquiry is to be undertaken. Once the research problem has been identified, the researcher is compelled to identify a site that maximises the opportunity to engage that problem (Erlandson et al. 1993: 53). Prior knowledge of the set-up is valuable in order to be able to foresee possible problems that might crop up during the investigation, such as civil unrest or difficulty with the language spoken by the local people (Druckman 2005: 236–237). The choice of the field can, however, already lead to subjectivity. In order to avoid subjectivity the researcher should investigate various fields as part of the pilot study before a particular field is selected. There may at times only be one option available for the specific inquiry.

In selecting a research field, the characteristics of the set-up should be studied carefully in order to ascertain the best field for the study. The policy pursued in that community, the visibility of the problem in a particular community, the attitude of the community towards outside researchers and the manner in which permission is granted are a few of these factors (Jorgensen 1989: 42–45; Van der Burgh 1988: 66). The ideal research field is one which is easily accessible, where cooperation with respondents can be easily achieved, where the researcher can move about freely and the required information can be easily obtained. Researchers are sometimes tempted to use the field that can be most easily accessed instead of one field that is the most relevant for the research endeavour.

It is often not possible to find the ideal field and usually some compromises have to be made. The pilot study is of major importance in determining the philosophy upheld in a particular community regarding the people, their daily activities and their reactions to events that occur in the community. In this manner the researcher can determine more accurately what should be investigated, and the extent to which it should be studied. By performing a pilot study of the actual field to be studied, the researcher might find that some of the propositions and research questions are not practical and should be changed before the main inquiry starts. New issues might only arise after the pilot study has been completed.

Jorgensen (1989: 33) states: "Your problem statement should be sufficiently broad to permit inclusion of the central issues and concerns, yet narrow enough in scope to serve as a guide to data collection." The problem statement should thus be sharply focused in order to be manageable in terms of time, money and respon-

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dents. The danger of including more issues than were originally decided on as the project proceeds is always present in participant observation. Well-formulated, flexible objectives are, perhaps, the most useful way in which to delineate the field into a manageable project. Delineation is very important in preventing the researcher from being led astray.

4.3 Gaining permission to enter the field

It is very important to gain permission to enter the field that has been decided on. This is of prime importance in order to get the study started. Van der Burgh (1988: 67) mentions that while the granting of permission by the relevant authority, such as the mayor of a town or the headman of a tribe, is important, it also lets people on the ground know what the project seeks to accomplish. At the very least, all the people directly involved in the project should be consulted in the process of gaining access to the community (Kirk 1999: 307). On the other hand, if too many people know what the aim of the project is, the chances of respondents manipulating the inquiry become a real threat to the study and should be avoided.

Gaining access to a community can be problematic, since a researcher is expected to avoid disturbing the community as far as possible. The researcher's presence should not be made known in too obtrusive a manner. If the inquiry takes place in a public park or street, it is not necessary to gain access and his or her presence will not attract much attention. However, if the research field is semi-public, like a shop or a theatre, it is suggested that the owner/manager be consulted. Respondents might sometimes feel flattered by the researcher's decision to involve them in the project (Rubin & Babbie 1997: 382). In other situations the researcher might be totally unwelcome and be treated offensively.

Permission granted at the beginning of the project does not entitle the researcher to all information and he or she should from time to time gain further permission as and when necessary. The researcher can get access to a field in either an overt or a covert manner. The researcher's overt admission to a research field is preferable, since fewer ethical issues are at stake. In the case of covert research many ethical issues arise, because respondents do not know about the project or the true reason for the researcher's presence.

Gaining admission to a research field can be an exacting task, and much depends on the imagination of the researcher, as well as his or her interpersonal and decision-making skills. A researcher who treats the community with tact and openness is likely to achieve more and to obtain permission more readily. Treating the leaders and community members with respect and in a warm professional manner will achieve more than attempting a forced entry.

4.4 Bargaining for a research role

Participant observation depends on the relationship between the participant observer, the respondents and the community at large. Maintaining proper relationships with the participants will determine to a large extent whether the information that is gathered will be accurate and reliable. Data are normally gathered by way of observation and interviewing, which may be on any point of the conti-

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nuum, from formally structured quantitative interviewing to unstructured qualitative interviewing.

Van der Burgh (1988: 71) says that different roles usually apply at different stages of the research project. These various roles are negotiated and renegotiated as the project proceeds, therefore not all roles are decided beforehand. The closed or open nature of the situation, the objectives of the research and the personal qualities of the researcher will all play a part in determining the role to be assumed by the researcher.

Babbie (2007: 289–291), Grinnell and Unrau (2005: 228–229), Grinnell and Unrau (2008: 227–228), Marlow (2005: 176), Patton (2002: 265), Rubin and Babbie (2005: 430–432), and Walliman (2006: 95–96) discuss the four ways in which participant observation can take place, namely the total observer, the observer as participant, the participant as observer, and the total participant. The role of total observer has the advantage of being more objective and passive, but loses out on involvement with participants and in having a say in the course of the process, and it also reduces the richness of the information to which the researcher is exposed (Thyer 2001: 335; York 1997: 264). It is usually difficult to remain an outsider, and the researcher will tend to be involved from time to time. Involvement in the process enhances acceptance by participants. It also enhances access to the group's everyday activities. However, it can result in subjectivity and could militate against the principles of science.

The role of total observer sometimes leads to physical and emotional fatigue, and the researcher will not be left untouched by his or her observations. One way of keeping perspective is to discuss the project with colleagues from time to time in order to gain maximum objectivity. If researchers do not participate in the community's activities it is difficult to explain their presence. In this way a natural situation can be changed into an unnatural one. In an unnatural situation the researcher becomes just as much an outsider as the respondents. This detracts from the participant–observation situation.

4.5 Maintaining relationships

The quality of data is enhanced if good relationships can be maintained with all the members of the community throughout the project. Relationships should be built on mutual trust, cooperation and the knowledge that the relationship will be terminated at some stage or other when the inquiry has been completed (Neuman 2000: 360). Participation in the inquiry might not have any obvious advantages for the participants and they might not feel that the study will in any way better their circumstances. The researcher will have to take certain matters into consideration in order to maintain a relationship of trust with respondents.

Social workers are, by and large, trained to establish and maintain relationships. This can sometimes be a disadvantage, since social workers might become more involved with respondents than is expected of an objective researcher. Researchers should not be too involved with respondents, though they should feel comfortable in their presence. Researchers should preferably begin the relationship on a rather unobtrusive note, instead of being too involved from the start. Some respondents might see researchers as intruders and will do their best to make them feel unwel-

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come in their community. Researchers will also have to do thorough introspection into their own personal preferences and prejudices before starting the research process.

4.6 Data gathering

In participant observation the gathering of data boils down to the actual observation and the taking of field notes. Druckman (2005: 247–249) calls this step of data gathering appropriately taking note while taking notes. Various data-collection techniques can be used, for instance open-ended narrative, checklists, field guides and interviewing (Denzin & Lincoln 2000: 674). It is also desirable to use more standardised procedures in participant observation as these may maximise observational efficacy, minimise investigator bias and allow for verification of the data (Denzin & Lincoln 2000: 676). Judd, Smith and Kidder (1991: 304) state that field notes should consist of everything the researcher sees and hears. Initially this might seem to be uninteresting, boring detail, but the researcher is unlikely to know at the beginning of the study what might become important later on. Field notes should already contain a chronological description in categories of what happens to the setting and the participants (Grinnell & Unrau 2008: 232).

Repeating the observation on a participant's behaviour is one of the most important ways in which changes in the problem can be evaluated and can also give an accurate indication of success (Huysamen 1993: 143–144). Observation of behaviour can be done in one or more of the following forms: regularity, duration, interval and intensity. Before the observation of behaviour takes place the researcher has to decide on the number of forms of behaviour to be observed and whether outside observers, inside observers or the participant as observer will do the observation.

A day-to-day report on the real observations done should be maintained in the form of field notes. Proper field notes take time, sometimes even more time than the actual observations (Bailey 1994: 253). Silverman (2000: 140–142) suggests two practical rules for making field notes, namely record what we see as well as what we hear, and expand field notes beyond immediate observations. In qualitative research it is difficult to write down all of the observed material. The researcher has a major task in making accurate and systematic notes as soon as the observation session has ended. These loose notes and jottings should be converted into field notes as soon as possible, at least at the end of every day (Druckman 2005: 247). The more time that passes between the session and the making of field notes, the less accurate the data will be.

Keeping the objectives of qualitative research in mind is very important, since otherwise the researcher might consider everything as being significant. This will help the researcher to stay on track and to be able to distinguish between what is important and what is not. The decision on what, how and when to make notes should be taken beforehand. Ideally, field notes should be taken down while observing. On the other hand, the researcher might miss out on important observations while taking time to make notes during the session. The taking of notes while doing observations might also inhibit the respondents.

Field notes should ideally contain a comprehensive account of the respondents themselves, the events taking place, the actual discussions and communication, and

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the observer's attitudes, perceptions and feelings. By making comprehensive field notes, the researcher can keep maximum control over the situation. The researcher will not necessarily utilise all field notes in the final report, but it is better rather to leave some notes out of the final report than to have inadequate information. Even if the researcher knows the setting well, it is still important to be on the alert for the unexpected, and he or she should start off in an unobtrusive manner on the broad spectrum of the study. At a later stage more focused observation can be done. It is always a good idea to start the intended project with the widest possible range of phenomena, gradually limiting attention to particular and selected phenomena or one phenomenon.

More focused observation should lead to the increased involvement of the respondents, especially as far as informal discussions are concerned. Putting questions to respondents is a skill, and respondents should never get the feeling that they are being cross-examined or that the researcher is inquisitive. The researcher should listen to respondents in an enthusiastic manner and ensure that they keep to the point under discussion.

4.7 Leaving the field

Researchers might reach the point where they know more or less everything about the topic, so that further data become repetitive and few new insights come to the fore. There also comes a time to conclude the study, owing to time or budget limitations. Researchers should never become so involved with the respondents that their withdrawal will leave a void and that the respondents feel that they cannot function without them. Researchers are advised to withdraw from the community gradually instead of making a sudden withdrawal, and to leave on a good note in order to provide for future projects in the same community. Researchers should be ethical and leave the field in a way that brings no negative consequences to any of the participants or other members of the community (Monette et al. 2005: 232).

4.8 Analysing the data

At this stage the researcher will do data reduction, presentation and interpretation (Sarantakos 2000: 210). The problems experienced with data analysis depend mainly on the degree of structure given to the research process. If, for instance, observations are made under strictly controlled circumstances within a proper structure, data analysis can be dealt with as in any other similar type of study. However, if the setting is unstructured or semi-structured, where the categories of behaviour are not properly delineated, the researcher faces another set of problems. The making of field notes can be facilitated if standardised forms for report writing are available. Such forms should never, however, stand in the way of unexpected events that might crop up from time to time.

4.9 Report writing

Researchers are sometimes tempted to focus on observation and participation and to neglect report writing. This is a big mistake. Besides writing up the formal responses to the measuring instrument such as the interviewing schedule,

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researchers should also make notes on their own feelings, speculations and perceptions. These notes should include both the empirical observations and their interpretation. It will never be possible to report on everything that is observed.

Researchers will have to rely on their memory for the reproduction of feelings and attitudes that cannot always be observed directly. The use of video and audio tapes will contribute towards objectivity. It is important that the information be well organised and systematised, so that, for instance, a specific tape is linked to a specific person, time and date. This will also prevent the researcher from allowing work to accumulate, thus avoiding frustration.

Before the actual empirical data of the investigation are discussed, the researcher will have to describe the characteristics of the community and the respondents, the interview room and setting in which the investigation took place, and the researcher's feelings and experiences during the investigation. The aims and objectives of the study are of major importance for the report. The research methodology, like the research design, the procedures, the data-gathering techniques and the sampling procedure, will also have to be discussed in detail in the report. Although the situation in which the research takes place might be well known to the researcher, he or she must always consider the reader of the report. Readers might not know anything about the community and the cultural setting in which the research takes place.

5. ADVANTAGES OF PARTICIPANT OBSERVATION

The following advantages of this procedure have been identified (Bailey 1994: 243–244; Graziano & Raulin 2000; Muller 1995: 65; Thyer 2001: 337–338; Unrau, Gabor & Grinnell 2007: 286):

- By manipulating one's own behaviour as an observer, one is able to test hypotheses by creating situations that are unlikely to occur naturally.
- It often makes the observer less obtrusive and in so doing reduces the likelihood that the observer will influence the participants' behaviour.
- By participating fully in the activities of the community, the researcher does not stand out as an outsider.
- By only observing, especially in an unobtrusive manner, the researcher will achieve the most objective experience of the community.
- It gives a comprehensive perspective on the problem under investigation, and the participant observer might discover things no one else has really paid attention to and that previously went unnoticed (Babbie & Mouton 2001: 295; Patton 2002: 263).
- It aims at in-depth investigation of a problem and is of a qualitative nature. In this manner the researcher can better understand and capture the context within which people interact (Patton 2002: 262).
- All of the research designs can be used in participant observation, but it is of special significance for exploratory studies with the aim of generating hypotheses in the course of the inquiry.

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- Data are gathered directly and are never of a retrospective nature. Unrau et al. (2007: 286) focus on the spontaneous quality of data that can be gathered in participant observation.
- It is of special importance in cases of studying attitudes and behaviour patterns of respondents in their natural situation.
- It is suitable for longitudinal studies, since these can take place over a period of months or even years. Changes that take place over time can thus be successfully studied.
- The flexibility and relatively unstructured nature of this procedure is a distinct advantage, since the problem can be redefined from time to time without necessarily detracting from the scientific qualities of the study (Grinnell & Unrau 2005: 232).
- In the case of unknown, obscure, unobtrusive or badly defined situations it can be used with a high degree of success.
- It can be used if the researcher has a good chance of gaining access to the field.
- It can be considered for the study if the problem under investigation can be confined to a specific geographical area.
- It has wide application in the human sciences.
- It has a specific link with practice and prevents results from becoming too theoretical.
- It can serve to contribute to more intensive study or it can be used independently. Unrau et al. (2007: 286) add that participant observation is a good technique in combination with other methods.
- It is not dependent on the ability or willingness of respondents to take part in the investigation.
- If major differences exist between the field of study and the community at large, it can be a valuable procedure to follow.
- It is ideal for the gathering of data on non-verbal behaviour.

6. DISADVANTAGES OF PARTICIPANT OBSERVATION

The following disadvantages of this procedure have been identified (Bailey 1994: 245–246; Denzin & Lincoln 1994: 381–382, 389; Denzin & Lincoln 2000: 634; Glicken 2003: 157–158; McBurney 2001: 220–222; Thyer 2001: 338; Unrau et al. 2007: 286; Yegidis & Weinbach 1996: 155–156):

- When the researcher fully participates in the activities of the community, respondents will not act as naturally as if no outsider were present.
- By only observing, the researcher will never gain the full experience of being part of the community in which the research takes place.
- Participant observation might have too little control over extraneous variables and this might result in the notion that this procedure is of lower scientific value if, for instance, it is compared with a scientific experiment.

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- Data gathered can seldom be quantified and summarised because of the small numbers of respondents normally used in studies of this nature (Unrau et al. 2007: 286).
- Even if permission has been obtained to study a particular community/field, problems of acceptance by the respondents might still exist.
- Since changes are possible during the course of the study, this could create problems for the researcher in staying within the boundaries of the problem statement.
- Validity can be a major concern. Observers are forced to rely almost exclusively on their own perceptions. They are, therefore, more susceptible to subjectivity, prejudices and selective perceptions. This can cause major obstacles in participant observation, since the researcher forms a close link with respondents and actually becomes part of the total situation.
- Reliability can also pose a problem. It is sometimes difficult for researchers to ensure that their findings are valid and not merely the effects of chance. In other words, the generalisability of findings can be an obstacle in participant observation.
- Accurate instruments for measuring field variables are lacking.
- Ethical problems might arise with regard to the particular community, especially if the researcher undertakes the study without the permission and informed consent of respondents. Issues of violation of privacy, anonymity and confidentiality might also create problems on an ethical level.
- Generalising is seen by some as undesirable if proper sampling has not been done. It is definitely not the aim of this procedure to generalise, but the researcher should work towards including the typical cases of the particular phenomenon under investigation.
- It can be a laborious, expensive and time-consuming endeavour.
- Because the particular phenomenon might not be acceptable to the researcher, it might be an emotionally trying experience for the researcher to undertake the investigation.
- It can be physically exhausting, since the researcher obtains masses of data and experiences on a daily basis without the conveniences of home and office.
- The mere presence of the researcher will in itself create changes in the community, and reactivity will always be a minor or even a major problem. It is virtually impossible for researchers to leave the field in the same state as it was before their involvement.

SUMMARY

This chapter points out that participant observation can be used in a wide variety of settings and that health professionals should make more use of this procedure. Participant observation is mostly qualitative and exploratory in nature. Senior researchers should be recruited to apply this procedure since a high degree of objectivity is needed, the course of the inquiry can change over time, and participant

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observation entails an in-depth study over a period of time with a restricted number of respondents.

It is very important to define the concept of participant observation and the role the researcher will take in the process. The role of the researcher can be presented on a continuum from total involvement on the one hand to total observation on the other. The characteristics and process of participant observation are discussed in an attempt to convey an understanding of this procedure, and in conclusion, the advantages and disadvantages of participant observation are discussed in an evaluative manner.

Self-evaluation and group discussion

You have selected participant observation as the main data-collection method for the qualitative study you intend to undertake. Explain the following:

- The nature of the study you are undertaking
- Why you decided on the particular research problem
- The steps of the process you will follow, as applied to your specific study

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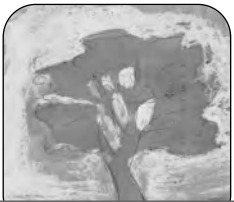

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Information collection: interviewing

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with interviewing as an information-collection method in qualitative research
- gain an understanding of what the researcher should know and do about interviewing as an information-collection method
- learn about the various types of interview that may be used for information gathering in qualitative research
- discover the difference between one-to-one and focus group interviews
- use the guidelines to conduct a one-to-one unstructured, semi-structured and focus group interview
- gain a perspective on the various skills required to conduct one-to-one or focus group interviews.

1. INTRODUCTION

This chapter will concentrate on one-to-one interviews and focus groups as interviewing methods for information collection during qualitative research. If the question arises as to which method of interviewing is preferable, let us state at the outset that the one is not superior to the other. The *purpose* of the research must guide the researcher to choose the most effective method. Focus groups could be meaningful in the case of a new topic, or when one is trying to take a new topic to a population, or if one wants to explore thoughts and feelings and not just behaviour. Things that are not likely to emerge in the one-to-one interview are more likely to come out in focus groups, because group dynamics can be a catalytic factor in bringing information to the fore. The most obvious difference between individual and group interviews is the amount of information that individual interviews provide about each

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interviewee (Carey in Morse 1994: 224; Jarbandhan & Schutte 2006: 674; Morgan & Krueger 1998: 1: 32). DePoy and Gilson (2008: 108) classify the interview as a naturalistic strategy. The discussion on the methods as such will further clarify this question. Interviewing in its broader sense will be discussed first, followed by a more focused approach on the one-to-one interview and, finally, by a discussion on focus groups.

2. INTERVIEWING AS AN INFORMATION-COLLECTION METHOD

Interviewing is the predominant mode of data or information collection in qualitative research. Researchers obtain information through direct interchange with an individual or a group that is known or expected to possess the knowledge they seek (DePoy & Gilson 2008: 108). The interview is a social relationship designed to exchange information between the participant and the researcher. The quantity and quality of information exchanged depend on how astute and creative the interviewer is at understanding and managing the relationship (Monette, Sullivan & DeJong 2005: 178). Seidman (1998: 1) states that one interviews because one is interested in other people's stories. Stories are a way of knowing. The root of the word *story* is the Greek word *histor,* which means "one who is wise and learned". Telling stories is essentially a meaning-making process. All interviews are interactional events, and interviewers are deeply and unavoidably implicated in creating meanings that ostensibly reside within participants.

It is not unusual to interview people with diverse and competing points of view, especially if the problem being addressed is complex. Researchers have to be inclusive and expansive when selecting individuals for interviews so that they can cover a range of perspectives (DePoy & Gilson 2008: 108; Jarbandhan & Schutte 2006: 675; Manning in Holstein & Gubrium 1995: 3). Both parties, the researcher and the participant, are thus necessarily and unavoidably active and involved in meaning-making work (Holstein & Gubrium 1995: 4). Bergum (in Morse 1991b: 61) refers to *conversation* rather than *interview*, as conversation implies a discussion and captures the attitude of the interaction. The conversation, like the interview, has a central focus, but is not one-sided. Interviewing the participant involves not only a description of the experience, but also reflection on the description. Kvale (in Sewell 2001: 1) defines qualitative interviews as "attempts to understand the world from the participant's point of view, to unfold the meaning of people's experiences, [and] to uncover their lived world prior to scientific explanations". Making use of peer interviewers instead of the traditional role played by the researcher can be a valuable means of enhancing our knowledge and understanding of a variety of population groups who tend to live beyond the gaze of more orthodox researchers (Elliott, Watson & Harries 2002: 172).

2.1 Approaching the interview

Assumptions about interviewing as a research process are widespread, including, for example, that everyone "knows" how to do it and that interview procedures vary little, regardless of the nature of the research question or approach. The quality of

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the interview depends mainly on the skills of the researcher as interviewer. It is therefore advisable to use highly skilled interviewers if researchers do not feel competent to do the interviewing themselves. Should the researcher, however, choose to do the interviews, training is essential. Thorough training, including familiarisation with the project and its goals, is important. Poor interviewing skills, poor phrasing of questions, or inadequate knowledge of the participant's culture or frame of reference may result in a collection that obtains few useful data. Donalek (2005: 124) refers to the qualitative interview as a shared journey and confirms the need for practice by the novice researcher. For the purposes of this chapter, the term *researcher* is used to refer also to the person approached to do interviews on behalf of the researcher.

Challenges that face the researcher when using qualitative research interviewing are establishing rapport in order to gain information from participants, coping with the unanticipated problems and rewards of interviewing in the field, and recording and managing the large volume of data generated by even relatively brief interviews (May in Morse 1991b: 188). Monette et al. (2005: 179) caution against *interviewer falsification*, referring to the intentional departure of the researcher from the designed interviewer instructions, unreported by the interviewer and which can result in the contamination of data. Before entering into a discussion about the types of one-to-one interview and focus group, it is necessary to focus on more general but very important aspects that the researcher should know about and be skilled in doing. Attention will be given to interviewing techniques and tips for the researcher, communication techniques needed by the researcher, common pitfalls in interviewing, and a discussion of the content versus the process of the interview.

2.1.1 Interviewing techniques and tips for the researcher

During interviewing, the researcher should apply the following interviewing techniques and tips to ensure an effective interview (Jarbandhan & Schutte 2006: 674; adapted from Seidman 1998: 63–77):

- The participant must do 90 per cent of the talking. An interview is not a dialogue. The whole point is for the participant to tell the story.
- Ask clear and brief questions. It is important to use words that make sense to the participants. Questions should be easy to understand, short and devoid of jargon.
- Ask single questions. Ask one question at a time.
- Ask truly open-ended questions. These do not predetermine the answers and they allow room for the participants to respond in their own terms. Ask questions that require more of an answer than "yes" and "no".
- Avoid sensitive questions. The participant might feel uneasy and adopt avoidance tactics if the questioning is too deep without the necessary rapport.
- Start with questions that are not controversial.
- Ask experience/behaviour questions before opinion/feelings questions.
- Sequence questions. "Funnel" questions from general to specific, from broad to narrow.

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- Sometimes a very general question can be useful in opening the dialogue, for example "What is your deepest concern about ... ?"
- One should not worry if one's questions are not as beautifully phrased as one would like them to be for posterity. A few fumbled questions might help to put the participant at ease.
- Ask questions when you do not understand.
- Avoid leading questions.
- Repeat key questions throughout the interview.
- Encourage a free rein, but maintain control.
- Allow for pauses in the conversation. Do not be flustered by periods of silence. Give the participants a chance to think of what they want to add before hustling them along to the next question. Try not to rush.
- Return to incomplete points. Often the participant does not provide full information at first.
- Use creative allusions, for example a statement such as: "Some people have told me ...". Or a question such as: "What do you think?"
- Speculation can aid reluctant respondents in opening up: "I'm not sure, but could it be that ... ?"
- Conclude interviews with general questions such as: "Is there anything further that you feel is important?"
- Ask the participant to reconstruct, not remember.
- Do not interrupt a good story because you have thought of a good question. Just jot down your question to be asked later.
- If the respondent is entering an interesting area, minimal probes are often all that is required to help him or her continue.
- Follow up on what the participant says.
- Follow your hunches.
- Explore laughter.
- Monitor the effect of the interview on the participant. Be sensitive enough to know when to focus and when to defocus.
- If the participant strays into subjects that are not pertinent, try to pull him or her back as quickly as possible. Keep the participant focused, and ask for concrete answers.
- Try to avoid "off the record" information, when the participant asks you to turn the tape recorder off.
- Do not switch the tape recorder on and off as this calls unnecessary attention to it.
- End the interview at a reasonable time.
- Be alert. Even when the tape recorder is turned off, the interview is not necessarily over.
- Do not use the interview to show off your knowledge, vocabulary, charm or other abilities. Good interviewers do not shine; only their interviews do.

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2.1.2 Communication techniques required by the interviewer

Active interviewing is not confined to asking questions and recording answers. Like other instances of ordinary conversation, trouble-free exchanges rely on mutual attentiveness, monitoring and responsiveness (Sacks et al. quoted in Holstein & Gubrium 1995: 46; 47). Several communication techniques are utilised during interviewing:

- *Minimal verbal responses.* A verbal response that correlates with occasional nodding, for example "mm-mm, yes, I see", will show the participant that the researcher is listening.
- *Paraphrasing.* This involves a verbal response in which the researcher will enhance meaning by stating the participant's words in another form with the same meaning.
- *Clarification.* This embraces a technique that will be used to get clarity on unclear statements, for example "Could you tell me more about ..."; "You seem to be saying ..."
- *Reflection.* Reflect back on something important that the person has just said in order to get him or her to expand on that idea: "So, you believe that suicide is sinful?"
- *Encouragement.* Encourage the participant to pursue a line of thought: "I find that fascinating! Tell me more."
- *Comments.* Inject your own idea or feeling to stimulate the participant into saying more: "I always thought that ..."
- *Spur.* Say something to tease, spur or challenge the participant to say more: "But isn't it true that ... ?"
- *Reflective summary.* Summarise the participant's ideas, thoughts and feelings verbalised so far to see if you really understood what he or she was saying: "So what you're saying is ..." The reflective summary has a structuring function and stimulates the participant to give more information.
- *Listening.* Interviewers should have superb listening skills.
- *Probing.* The purpose of probing is to deepen the response to a question, to increase the richness of the data being obtained, and to give cues to the participant about the level of response that is desired. It is a technique to persuade the participant to give more information about the issue under discussion. Methods of probing include the following:
  - *Contradicting.* Deliberately giving an opinion opposite to the participant's, attempting to arouse his or her further comments
  - *Linking.* Linking up the participant's comment with the information which the researcher wants to know
  - *Faking puzzlement.* Pretending to be confused, indicating elaboration is needed
  - *Challenging.* Demanding more information to prove the validity of the participant's claims
  - *Encouraging.* Giving compliments to encourage the participant to carry on

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- *Showing understanding and allowing time for elaboration.* Letting the participant know that his or her comments are understood and valued, and allowing him or her time for further comments
- *Acknowledging.* Repeating the participant's answer to show attention
- *Direct questions.* Asking questions to get more information
- *Procuring details.* Asking further questions to see if more information can be obtained (Monette et al. 2005: 178; Okun 1982: 61–63).

2.1.3 Common pitfalls in interviewing

Careful planning can reduce problematic interviews. If multiple problems arise rather reschedule the interview (Donalek 2005: 124). Field and Morse (1994: 67–73) discuss several pitfalls in interviewing:

- *Interruptions.* This distracts participants, so that thoughts are lost and time must be spent regaining the level of intimacy established prior to the interruption. The telephone is the most common interrupter.
- *Competing distractions.* A high-quality interview will require concentrated energy on the part of both researcher and participant. Do not plan too many interviews for one day. Ensure debriefing of the interviewer.
- *Stage fright.* The use of the tape recorder as well as the use of an open-ended question can make the participant feel vulnerable.
- *Awkward questions.* In the course of an interview many questions are likely to be asked that are not normally part of polite conversation. Decide if such a question is absolutely necessary.
- *Jumping.* Avoid asking questions in an apparently illogical order.
- *Teaching and preaching.* The researcher may become trapped into a teaching mode by a question asked by the participant on health information, for example, or the participant being misinformed, which may trap the interviewer inadvertently into a preacher role. Do not fall into the first trap. The second can be handled by correcting misinformation at the end of the interview.
- *Counselling.* The premature use of reflecting and summarising can inhibit the interview. It is easier for the participant to agree with the researcher than to explain how it *really* is. Analysis too early on invites premature closure of the topic and precludes in-depth enquiry.
- *Revealing one's own response.* The participant could be testing the researcher by giving information in the third person and observing the researcher's response.
- *Superficial interviews.* Frequently interviews are too shallow because the researcher moves the participant along too quickly. No attention is given to non-verbal cues and no time is spent getting to know the participant.
- *Confidential information.* A level of trust may develop between the researcher and the participant to the extent that the participant passes on information labelled as confidential. The participant may give information which, ethically, the researcher should act on, such as suicide threats. Inform the participant that such matters cannot be kept confidential, as life may be at risk.

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- *The use of translators.* This could slow the process, as the translator first has to translate or may not accurately convey the affective meaning and expression of the participant.

2.1.4 Interview content versus process

It is important that the researcher has the ability to differentiate between content and process during interviewing. The content of the interview is *what* the participant is saying. This is the easiest component of the interview to study. The process of the interview is a much more elusive, though powerful, component of the interview. It involves reading between the lines of what the participant says, and noticing *how* the participant talks and behaves during the interview. The process may confirm, enrich or sometimes even contradict the content of what the participant says. One very important source of information about the process of the interview is how the researcher personally reacts to the participant. In a sense, the researcher is a "barometer". The word *process* is used deliberately when describing the open-ended interview. It is considered a process because the researcher is exploring new territory with the participant. As the process of exploring develops, the interview may be directed by the participant's responses into unanticipated areas. It is also a process insofar as questions start at a superficial level and increase in depth as relationships within the data are identified.

Sensitivity to context underscores the need for researchers to be at least minimally aware of the cultural and ethnographic background in which the interviews are embedded. By drawing on background knowledge, researchers can make their research more productive, incorporating indigenous interpretive resources, perspectives and landmarks into their inquiries (Holstein & Gubrium 1995: 45). Both the interviewer and participant assume that the participant's answers and comments will be relevant to varied aspects of the topic, not unrelated matters. The meaning of what emerges is then actively constructed within the interaction. The more structured interviews are, the less visible are meaning-making linkages (Holstein & Gubrium 1995: 52).

3. ONE-TO-ONE INTERVIEWING AS AN INFORMATION-COLLECTION METHOD

This section will focus on unstructured, semi-structured and ethnographic interviews.

3.1 Types of one-to-one interview

Qualitative studies typically employ unstructured or semi-structured interviews. *Unstructured interviews* are also known as in-depth interviews. Collins (1998: 1) states that the dichotomy between "structured" and "unstructured" is misleading, as "unstructured" interviews are structured in a number of ways. The researcher, in the very act of initiating the interview, necessarily determines the nature of the event. As the interview progresses, an internal dynamic develops and a storyline emerges which becomes increasingly complex. Unstructured interviews are con-

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ducted without utilising any of the researcher's prior information, experience or opinions in a particular area. Since human interaction is based on culturally derived structure and meanings that are shared to some extent, it would be extremely difficult for the researcher to approach any interview as a completely neutral element. *Semi-structured interviews* are defined as those organised around areas of particular interest, while still allowing considerable flexibility in scope and depth (Dicicco-Bloom & Crabtree 2006: 315; Jarbandhan & Schutte 2006: 678; May in Morse 1991b: 189).

Field and Morse (1995: 67) refer to *open-ended* or *guided interviews*. In the first, new territory is explored with the participant. The latter is used when the information required is about a certain topic, and while the structure of the topic is known, the answers cannot be anticipated. The guided interview is ideal for obtaining comprehensive and comparable data. Because all respondents have been asked the same questions, responses can be coded and tabulated, and descriptive statistics used to examine the data for relationships.

The classification of unstructured and semi-structured one-to-one interviews will be used for this chapter. The unstructured one-to-one interview will first be discussed, followed by a discussion of the semi-structured, the ethnographic, the e-mail, the telephone and the convergent interview.

3.1.1 The unstructured one-to-one interview

The unstructured one-to-one interview, also sometimes referred to as the in-depth interview, merely extends and formalises conversation. It is referred to as a "conversation with a purpose". The purpose is not to get answers to questions, nor to test hypotheses, and not to "evaluate" in the usual sense of the term. At the root of unstructured interviewing is an interest in understanding the experience of other people and the meaning they make of that experience. It is focused and discursive, and allows the researcher and participant to explore an issue. It is used to determine individuals' perceptions, opinions, facts and forecasts, and their reactions to initial findings and potential solutions. Josselson (in Collins 1998: 8) mentions that the events recounted and experiences described are made more substantial and more real through being recorded and written down.

The unstructured interview is often dismissed as lacking "objective data". It is, nevertheless, a type of interview which the researcher uses to elicit information in order to achieve understanding of the participant's point of view or situation. Denzin (quoted in Collins 1998: 1) adds to this by referring to the interview as an interactional situation. Interviews are social interactions in which meaning is necessarily negotiated between a number of selves (Collins 1998: 3; 5). The relationship between the researcher and the participant is fluid and changing, but is always jointly constructed. Mason (in Collins 1998: 1) mentions that it is more useful to talk of data *generation* than data *collection*.

The researcher should be neither objective nor detached, but should rather be engaged. Engagement implies willingness on the part of the researcher to understand the participant's response to a question in the wider context of the interview as a whole. Marshall and Rossman (1995: 80) state that the participant's perspectives on the phenomenon of interest should unfold as the participant, and not as the researcher, views it. The participants overtly control the information they give, but

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they cannot always control what information they give out (Goffman quoted in Collins 1998: 12). A challenge in interviewing is that it has to do with achieving and maintaining a balance between flexibility and consistency in data collection. Flexibility is essential for discovery and for eliciting the participant's story. However, some consistency is also essential in the types of question asked, the depth and detail, and the amount of exploration versus confirmation. Thus an important challenge is maintaining enough flexibility to elicit individual stories, while at the same time gathering information with enough consistency to allow for comparison between and among subjects (May in Morse 1991b: 192).

QUESTION PREPARATION FOR UNSTRUCTURED INTERVIEWS

Prior to interviewing, the researcher must define the information required. The information supplied by the interviews must clearly relate to specific questions that the researcher seeks to answer. All unstructured interviews require a format and follow a process. The question or questions to be answered should be prepared and reviewed with experts in the field and even with selected participants. Rubin and Rubin (1995: 145) mention that an interview is built up of three kinds of question prior to talking to the participant:

- *Main questions.* The researcher prepares a handful of main questions with which to begin and guide the conversation.
- *Probe.* When responses lack sufficient detail, depth or clarity, the interviewer puts out a probe to complete or clarify the answer, or to request further examples and evidence.
- *Follow-up questions.* These pursue the implications of answers to the main questions.

Field and Morse (1994: 66) further mention that it is important to minimise the dross rate, or the amount of irrelevant information in the interview. The best strategy for doing so is to prepare several open-ended questions before the interview.

May (in Morse 1991b: 196) mentions that there is an overall trend from unstructured to more focused interviewing as the investigator gains knowledge about the participant's worldview. However, at the beginning of each study, there is considerable trial and error in early interviews, as the wording and ordering of questions in a particular area of interest are literally field-tested with participants. Babbie (2007: 305–306) mentions the continuous nature of qualitative interviewing, which means that the questioning is redesigned throughout the project.

In a bracketed or presuppositionless interview, the research question is not predetermined, but rather flows within a clue-and-cue-taking process after the initial meaning or analogy question has been asked. The phenomena of experience are then probed with the participant until "the thing itself" is illuminated and described (Ray in Morse 1994: 129).

PILOTING

Seidman (1998: 32) urges researchers to build a pilot venture into their proposals in which they try out their interviewing design with a small number of participants. The researchers will hereby come to grips with some of the practical aspects of

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establishing access, making contact and conducting the interview, as well as becoming alert to their own level of interviewing skills. Researchers should have a general plan of inquiry and be familiar with the questions to be asked, but not have a set of questions that must be asked using particular words and in a particular order (Babbie 2007: 306).

NUMBER OF PARTICIPANTS

Researchers frequently ask how they will know when enough participants have been interviewed. Some argue that the number should not be established ahead of time. Others discuss "snowballing", while still others use purposive sampling. There are, however, two criteria for "enough". The first is *sufficiency*. Are there sufficient numbers to reflect the range of participants and sites that make up the population so that others outside the sample might have a chance to connect to the experience of those in it? The other criterion is *saturation* of information. This is the point in the study where researchers begin to hear the same information repeatedly being reported and they no longer learn anything new (Monette et al. 2005: 242; Seidman 1998: 47, 48).

Sandolowski (in Morse 1994: 58) cautions that qualitative research does not permit anyone the licence to claim that he or she has reached "information redundancy" or "saturation" of a theoretical category after talking with or observing a few people of vastly different social circumstances on one occasion only. Such a claim reveals a clear and unsupportable violation of rule.

THE INTERVIEW SETTING

Participants must be prepared for unstructured interviews. Arrange the time and place in advance, follow this up in writing and confirm closer to the date. A quiet environment, where no interruptions occur, will facilitate the process. This could be at the participant's home or in a more professional environment, or in a setting agreed upon by both parties. Select a setting that provides privacy, is comfortable, is a non-threatening environment and is easily accessible. Provide seating arrangements that encourage involvement and interaction.

CONDUCTING AN UNSTRUCTURED INTERVIEW

The introduction to an interview is something of a signpost to guide active participants through the open terrain of their experience. It may suggest relevant ways of thinking about and linking experience, as well as bringing alternative resources into play (Holstein & Gubrium 1995: 42). After introductory pleasantries, confirm once again the general purpose of the research, the role that the interview plays in the research, the approximate time required, and the fact that the information is to be treated confidentially. Explain the manner in which the researcher will be recording responses and obtaining permission for tape recording. Finalise the signing of voluntary consent forms and inform the participants that if they wish to withdraw at any time, they are free to do so. Field and Morse (1994: 66) point out that consent can be obtained during preliminary interviews when finalising arrangements, or verbal consent may be recorded at the beginning of the interview. Should the interview cause any discomfort, a referral system must be available.

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Establish rapport by attentive listening, and showing interest, understanding and respect for what the participant says. Field and Morse (1994: 66) report that participants will size up researchers and make silent decisions about whether or not they are agreeable and can be trusted. During the interviewing process the goal of the researcher is to get participants to express their ideas about particular issues. The researcher should see the interview as an art. During the interview try to get the participant to do the following:

1. Open up and express ideas.
2. Express ideas clearly.
3. Explain and elaborate on ideas.
4. Focus on issues at hand rather than wander onto unrelated topics.

As barriers are removed, the interaction becomes more intimate; the information obtained will then be more valid and more meaningful. Allow participants to finish what they are saying and let them proceed at their own rate of thinking and speaking. This type of interview involves asking open-ended questions.

It is essential to listen for implicit and explicit meanings in the explanations and descriptions provided by the participant. The researcher must be able to recognise "thin" areas and probe for additional information, to remember all that has developed in previous interviews, to make associations and verify assumptions, and to "get inside the participant's skin" so that the topic may be understood from the participant's perspective. This process is exhausting and numbing for both the researcher and the participant. Therefore, do not continue for more than one hour. Several short interviews are more effective than one long one (Field & Morse 1994: 67).

Seidman (1998: 11) suggests a series of three separate interviews with each participant when conducting phenomenological interviews. People's behaviour becomes meaningful and understandable when placed in the context of their lives and the lives of those around them. Without a context there is little possibility of exploring the meaning of an experience. The first interview establishes the context of the participant's experience. The second allows participants to reconstruct the details of their experience within the context in which it occurs. The third interview encourages the participants to reflect on the meaning their experience holds for them.

Perhaps the greatest and most fundamental skill that researchers should develop is the ability to analyse an interview while participating in it. Researchers must be aware of the relationship as well as the content factors in an interview. When ending the interview, it is better to "wind down" rather than end it abruptly. Researchers should summarise the major points, ask whether participants have any questions and let them know how to contact them if they need to. Researchers should thank them for their availability and participation.

3.1.2 The semi-structured one-to-one interview

In general, researchers use semi-structured interviews in order to gain a detailed picture of a participant's beliefs about, or perceptions or accounts of, a particular topic. The method gives the researcher and participant much more flexibility. The researcher is able to follow up particular interesting avenues that emerge in the

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SECTION
D

interview, and the participant is able to give a fuller picture. Semi-structured interviews are especially suitable when one is particularly interested in complexity or process, or when an issue is controversial or personal. With semi-structured interviews the researcher will have a set of predetermined questions on an interview schedule, but the interview will be guided rather than dictated by the schedule. Participants share more closely in the direction the interview takes and they can introduce an issue the researcher had not thought of. In this relationship, participants can be perceived as the expert on the subject and should therefore be allowed maximum opportunity to tell their story (Smith, Harré & Van Langenhoven 1995: 9–26). Questions are nearly always open-ended.

THE INTERVIEW SCHEDULE

A questionnaire written to guide interviews is called an interview schedule or guide. This provides the researcher with a set of predetermined questions that might be used as an appropriate instrument to engage the participant and designate the narrative terrain (Holstein & Gubrium 1995: 76; Monette et al. 2005: 178). Producing a schedule beforehand forces researchers to think explicitly about what they hope the interview might cover. It forces them to think of difficulties that might be encountered, for example in terms of question wording or sensitive areas. Hutchinson and Webb (quoted in Morse 1991b: 311) point out that generating useful questions with appropriate content and structure takes time and thought.

Having determined the overall issue to be tackled in the interview, the researcher has to think about the broad range of themes or question areas to be covered in the interview. The areas must then be arranged into the most appropriate sequence. Two questions might help to sort out the sequence:

- What is the most logical order in which to address these areas?
- Which is the most sensitive area? (In general it is a good idea to leave sensitive topics till later in the interview.)

Researchers should think of appropriate questions related to each area in order to address the issue they are interested in (Smith et al. 1995: 14, 16). It may be meaningful to arrange questions from simple to complex, and from broad to more specific, in order to allow the participants to gradually adjust to the pattern of the interview schedule (Bailey 1982: 196). Questions should follow a logical sequence and be limited to a few only. Researchers should ensure that they cover the topic thoroughly.

When constructing the questions, a focused literature study could be done to guide the researcher to understand the construct at hand and to know what questions to ask to cover the construct. Questions should be neutral rather than value laden or leading. Jargon and ambiguous questions should be avoided in order to eliminate confusion and prejudice. Open-ended questions should be asked to allow the participants to express themselves freely. Ensure that they are non-judgemental and unbiased. The questions should be focused to ensure that the interviews give the specific information required for the purpose of the study. Smith et al. (1995: 16) mention that in constructing the schedule, the first draft questions might be too explicit. In redrafting, these become gentler and less loaded. It might be necessary to use the technique of *funnelling,* which means that for certain issues the

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researcher may be interested in eliciting not only the participants' general views but also their response to more specific concerns.

■ CONDUCTING THE SEMI-STRUCTURED INTERVIEW

Semi-structured interviews generally last for a considerable amount of time and can become intense and involved, depending on the particular topic. After the participant is made to feel comfortable and at ease, facilitate and guide him or her instead of dictating the encounter. If the researcher has learned the schedule in advance, then he or she will be able to concentrate during the interview on what the participant is saying, and also occasionally monitor the coverage of the scheduled topic (Smith et al. 1995: 9–26). The researcher could also hand the interview schedule to the participant and they could read it together. The participant can then choose which particular question he or she wishes to answer at specific stages. The participant is thus allowed a strong role in determining how the interview proceeds. Not every question has to be asked. The interview may well move away from the questions on the schedule, and the researcher must decide how much deviation is acceptable.

Active interviewing is not confined to asking questions and recording answers. Like other instances of ordinary conversation, trouble-free exchanges rely on mutual attentiveness, monitoring and responsiveness (Sacks et al. in Holstein & Gubrium 1995: 46; 47).

In order to avoid repetition during discussion of the various methods in this chapter, only those aspects specific to the semi-structured interview have been mentioned. The aspects already mentioned under unstructured interviews should be applied to semi-structured interviews as well.

3.1.3 The ethnographic interview

Described as a "particular kind of speech event", these interviews are used to gather cultural data. DePoy and Gilson (2008: 113) refer to ethnography as revealing and characterising the underlying patterns of behaviour and meaning of a culture. The researcher might be etic (an outsider to the cultural group) or emic (a member of the group), aiming to obtain perceptions of needs from the "insider" perspective (Creswell in DePoy & Gilson 2008: 113). Spradley (in Marshall & Rossman 1999: 112) identifies three main types of question:

- *Descriptive questions* allow the researcher to collect a sample of the participant's language.
- *Structural questions* discover the basic units of cultural knowledge.
- *Contrast questions* provide the researcher with the meaning of various terms in the participant's language.

Interviews are used to validate observations made during the participant's observation and to provide direction for future observations. Interviews may be formal or informal. Informal interviews are not prearranged; they involve asking questions about an event or interactions immediately after these occur in order to check the participant's perceptions against the researcher's. Formal interviews involve some

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planning, such as making up an interview guide covering a list of topics or specific questions that the researcher wants to explore with participants (Roper & Shapira 2000: 22).

3.1.4 The e-mail interview

Although e-mail has been widely used for more than a decade, its value as an interview technique has not been thoroughly reviewed and assessed (Hunt & McHale 2008: 1415). However, new information and communication technologies have more recently opened up new opportunities for qualitative researchers. When compared with the face-to-face interview, the e-mail interview entails two types of displacement relating to the fundamental dimensions of human experience. In relation to *time*, the interactions between the interviewer and participant are likely to be asynchronous, while in terms of *space*, the relationship takes place "at a distance" through the medium of electronic, screen-based text (Bampton & Cowton 2002). Because of the limitations of the e-mail interview, triangulation methods should always be applied: a series of face-to-face interviews will validate e-mail interview findings (Hunt & McHale 2008: 1420). The e-mail interview method is in a state of infancy, but it has huge future potential (Hunt & McHale 2008: 1421).

In this discussion, attention will be given to the process, advantages and disadvantages of the e-mail interview.

PROCESS OF THE E-MAIL INTERVIEW

The e-mail interview involves a single interviewer and a single participant, but the interviewer can be interviewing more than one person at a time. The e-mail interview will take place within a single e-mail script but over several interactions and several days or sometimes longer, and it is usually appropriate to set time limits on such an interview. It would be useful to establish some ground rules regarding engagement. These could cover the length of the interview, as well as other issues such as confidentiality, and reminders if no responses are received. Not all the questions are sent to the participant at the same time, as the process becomes more interactive by sending initial questions, waiting for a response and then responding with further questions. Participants should, however, always be told about the number of questions that will be asked. They should also be told that their answers should be as detailed as possible. Closure is reached when there are no more questions to ask that are likely to lead to further useful information. This will occur after the interviewer has asked if there are any further comments. Analysis will proceed in the usual way as the interview is already in writing and no transcription is required (Bampton & Cowton 2002; Hunt & McHale 2008: 1416–1419).

ADVANTAGES OF THE E-MAIL INTERVIEW

- *Cost.* The e-mail interview requires no travelling, no hire or purchase of recording equipment, and no transcribing costs. It also lessens transcription errors.
- *Range of participants.* It is possible to interview people anywhere in the world.
- *Time for reflection.* The e-mail interview enables both the interviewer and the participant to reflect on what has been said both in the short or longer term.

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They can scroll back in the script at any point. This time for reflection enables deeper processing of information.

- *Saying things that would not have been said.* The impersonal nature of the e-mail interview might help people say things that they would not be willing to say to a person face to face. It also provides time for them to construct a response to a particular question.
- *Working with a set of interviews simultaneously.* The e-mail interviewer might be conducting several interviews simultaneously, which enables more rapid collection of data and interaction between the interviews.
- *Rapport.* The time taken to conduct the e-mail interview might enable a good rapport to develop between the interviewer and the participant.
- *Overcoming interviewer effects.* Face-to-face interviews might be affected by the personal visual characteristics of the interviewer or the participant.
- *Convenience of time schedules.* The researcher and participant do not have to identify a mutually convenient time to talk to each other (Bampton & Cowton 2002; Hunt & McHale 2008: 1417; Monette et al. 2005: 184).

DISADVANTAGES OF THE E-MAIL INTERVIEW

- *Problems with the sample.* The issue of bias is important and will depend on how the study is advertised. Another major problem is that researchers cannot be certain that they are interviewing the person they think they are interviewing.
- *The interview takes too long and loses focus.* The participant might begin interviews enthusiastically, but might get bored over time.
- *Ethical issues.* Participants might not complete the interview because they have decided to withdraw without informing the interviewer.
- *Working with a set of interviews simultaneously.* Problems might arise if the interviewer is trying to conduct too many interviews at the same time, which could cause information overload.
- *Missing non-verbal cues.* A number of cues that might be relevant are missing as a result of the nature of the interaction.
- *Impersonality.* Cyberspace is an impersonal world.
- *Asynchronicity.* The delay in interaction could vary from seconds to days (Bampton & Cowton 2002; Hunt & Mc Hale 2008: 1417, 1418; Monette et al. 2005: 185).

3.1.5 The telephone interview

The increasing use of telephone interviews across diverse fields of research suggests that the method has considerable value, as face-to-face interviews tend to be a considerably more expensive means of gathering data. The speed with which a telephone interview can be completed also makes it preferable at times. Not every project is appropriate for a telephone interview, and selecting the right situation is vital for success. There is no evidence to suggest sensitive topic areas should not be investigated using this method, although responses may be shorter and less information divulged over the phone. Since the time span for an effective telephone interview is often less than in a face-to-face situation, telephone interviews are par-

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SECTION
D

ticularly suitable for projects with a clearly defined focus. The conversation can be recorded and observed with less intrusion than during face-to-face interviews (Monette et al. 2005: 182; Smith 2005: 32–34, 37).

There are, however, several problems associated with a telephone interview, for example special arrangements are needed to record the participant's answers (Bampton & Cowton 2002). Concerns have been raised about the quality of the data, although there is no evidence in the literature. The likelihood of interviewer bias is the same as with other methods (Garbett & McCormack 2001: 95; Smith 2005: 33).

In this discussion, attention will be given to the process, advantages and disadvantages of the telephone interview.

PROCESS OF THE TELEPHONE INTERVIEW

Preparing for the telephone interview should include sending an initial letter/e-mail to the participants introducing yourself, how you got their details, what you are aiming to find out, when you would like to ring, how long the interview will take and your contact details. You could include a schedule of the interview so that the participant has time to prepare. Practise beforehand to ensure questions sound natural and comprehensible. Decide on the method of recording. Setting up the space and arranging for privacy during the interview with no distractions are important tasks before the interview can take place. A speakerphone could be useful. The participant's confidentiality should be protected. It is harder to establish and maintain rapport in a telephone interview, and the researcher should be cautious about interview length. Generally, telephone interviews should not last longer than 20 minutes. Telephone at the time arranged, identify yourself and establish credibility. Sound friendly but professional. Check you are speaking to the right person and ask whether it is convenient to talk. Give a clear and concise introduction about the aims of the interview. Seek permission from the participant to record the interview and, if taking notes, inform the participant to prepare him or her for pauses in the conversation. Follow the interview schedule but be flexible where necessary. The early part of an interview is described as the most unpredictable stage. Create an atmosphere of confidence and professionalism, and reassure the participant of his or her usefulness. Adhere to the time limit you have agreed upon with the participant. At the end of the interview, offer the participant the opportunity to add any other comments, and thank the participant for his or her time and contribution. After the interview make field notes immediately (Hughes & Addington-Hall 2004: 450; Kallio et al. 2000: 611; Smith 2005: 34–37).

ADVANTAGES OF TELEPHONE INTERVIEWS

- The opportunity to collect data from geographically disparate samples is greater.
- Cost effectiveness is increased compared with face-to-face interviewing.
- Travel costs are eliminated.
- There is greater acceptability on the part of participants because such interviews generally take less time.
- There is an opportunity to ensure that all questions are answered and clarified.
- Response rates are increased when compared with postal surveys.

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- The physical appearance of both the interviewer and the participant has no influence.
- The interviewer can take better notes during the interview.
- Interviewer falsification can be limited.
- The personal safety of both researchers and participants is ensured.
- Such interviews allow for computer-assisted telephone interviewing, for example making notes while talking (Garbett & McCormack 2001: 95; Monette et al. 2005: 182; Rubin & Babbie 2005: 296–297; Smith 2005: 32–33, 36).

DISADVANTAGES OF TELEPHONE INTERVIEWS

- Telephone interviews may not provide very detailed information.
- The nuances of face-to-face interaction may be lost.
- Finding telephone numbers may be difficult.
- Participants might feel pressurised by the call.
- Organising the interviews can be very time consuming.
- It is harder to establish and maintain rapport.
- The duration of this kind of interview is shorter than that of face-to-face interviews.
- Participants can just hang up.
- Answering machines can "screen" calls and prevent participants from responding to calls (Garbett & McCormack 2001: 95–96; Rubin & Babbie 2005: 296).

3.1.6 Convergent interviewing

Convergent interviewing (CI) is an in-depth interviewing method developed by Dick (1990) primarily for organisational change and development processes, but it has not been adopted in health and social sciences research more generally. Interviewing in CI combines some of the features of structured and unstructured interviews, and uses a systematic process to refine the information collected (Dick 2000). It is the most appropriate technique for building theory in an underexplored area. Driedger et al. (2006: 1145–1157) argue that CI can be usefully applied in under-researched areas characterised by an absence or dearth of established theoretical and methodological foundations. CI is used to impose as few of the researcher's ideas and intuitions as possible on the data, and to let the data speak for themselves. CI is both an interviewing technique and a methodological approach to qualitative research.

GOAL OF CONVERGENT INTERVIEWING

Convergent interviewing is useful in situations where the topic might be well established but not yet known or fully understood by the researcher. CI can help transcend geographic and researcher barriers that can occur when the research process is informed by different disciplinary backgrounds and when multiple interviews are necessary for a project. It provides an analytical rigour that facilitates the early analysis of qualitative data and provides a powerful method for network analyses (Driedger et al. 2006: 1145–1157). It can be most valuable when the researcher is in doubt about the information which is to be collected (Dick 2000).

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THE PROCESS OF INTERVIEWING

CI was designed to collect, analyse and interpret qualitative data about people's experiences, opinions, attitudes, beliefs and knowledge and to converge on important research issues. It is a form of in-depth interviewing and preliminary interpretation in which the process is highly structured, but content is left less structured or is cyclical in nature. A very general question in the topic starts and facilitates the convergent process. After each interview the researchers identify priority issues raised and determine issues where there was agreement or disagreement. They start by pairing two interviews and compare the themes that emerge from each. In a later interview the researchers should probe for disconfirming views. If the respondents disagree about some topic, in a later interview the researchers should probe for an explanation. They can then develop more focused questions and prompts to probe subsequent participants about these issues in order to explain and refine the agreements and disagreements between interviews. Eventually, once agreement has been reached, disagreements explained and no new issues are forthcoming, interviews are stopped (Dick 2000; Driedger et al. 2006: 1150).

Key steps in the process include obtaining prior knowledge of the topic area from the literature or in the context of the interview (e.g. the organisation), developing the open, very general question to engage participants and to allow them maximum freedom to express their ideas and beliefs. Researchers should frequently compare notes – as this is the heart of the convergence process – and also determine when saturation is reached.

In CI, it is strongly recommended that the researchers begin their literature review process prior to interviewing participants and during the interview process (Dick 1990). Reading the literature while interviewing permits an "unfolding" of the literature as findings emerge from the interview (Driedger et al. 2006: 1149). CI can be used to expand, illuminate or improve theoretical knowledge within a field of study (Rao & Perry 2004).

QUESTION

A typical question in CI asks participants to share a personal story and comment on both the "good" and the "bad" of the experience or issue. It has similarities to the critical incident technique but without the structure in questions. Participants are also not guided by a brief statement prior to the interview. CI encourages the participants to speak about their own experiences in a way that is meaningful to them (Driedger et al. 2006: 1150).

SAMPLING METHODS

Sampling is typically heterogeneous and can be augmented by snowball sampling. Ideally, a minimum of 12 interviews is needed to create stability among the views in the sample (also referred to as saturation) (Driedger et al. 2006: 1151).

DATA CAPTURE

Dick (1990) prefers a self-designed memory system, but Driedger et al. (2006: 1152) refer to tape recording and field notes as in other interviews. Researchers should work in pairs and have frequent discussions in order to compare and contrast.

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■ **DATA ANALYSIS**

Preliminary analysis involves continual rereading of the interviews and field notes and developing themes and highlights found within. Through conversations (face to face, telephone, e-mail exchanges) researchers develop thematic coding. The highlight of the interviews and the information attained from literature searches and stakeholder input are combined to form a detailed coding scheme. In the CI process, researchers are a visible component of data analysis (Driedger et al. 2006: 1145–1157).

3.2 Tape recording of interviews

If possible, and if permission is obtained from the participants, the researcher should record interviews on tape or video. Smith et al. (1995: 17) mention that a tape recorder allows a much fuller record than notes taken during the interview. It also means that the researcher can concentrate on how the interview is proceeding and where to go next. It is recommended that both an electrical and battery-operated tape recorder are used to ensure data capturing. Use a high-quality tape recorder and tapes. External microphones could be useful for clarity. The tapes can later be transcribed for close analysis. The participant should always have the right to ask for the tape after the interview. When tape recording is not possible, detailed "process notes" of the interviews must be taken, which should be clarified and elaborated as soon after completion of the interviews as possible (Holstein & Gubrium 1995: 78).

Tape recording does have its disadvantages, however. The participant may not feel happy being taped, and may even withdraw. Tape recorders should therefore be placed inconspicuously so as not to unnerve the participant or novice researcher.

3.3 Field notes on the interview

During interviewing, it is vital to make full and accurate notes of what goes on. Do not trust your memory any more than you have to (Babbie 2007: 310). Always sit down immediately after an interview and jot down your impressions. These notes will help you to remember and explore the process of the interview. Field and Morse (1994: 79–82) refer to some critical points to follow when writing field notes in order to minimise loss of data. These include getting right to the task; not talking about the observation before it is recorded; finding a quiet place to write; setting aside adequate time to complete the notes; sequencing events in the order they occurred; and letting the events and conversation flow from the mind onto the paper. It may be useful to speak observations into a recorder. Field notes are a written account of the things the researcher hears, sees, experiences and thinks about in the course of interviewing. Babbie (2007: 311) suggests that notes should be taken in stages: first sketchy notes (words and phrases) followed up later with written notes in more detail.

Babbie (2007: 310) suggests that both empirical observations and your interpretations of them should be noted. Record what you "know" has happened and what you "think" has happened. The observations and interpretations should be kept distinct. Write down your emotions, preconceptions, expectations and prejudices so

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that you can develop them in the final product. Several models for taking down field notes are available, but this is not the focus of this chapter.

3.4 Analysing the interviews

It is poor practice to "stack" interviews and then to try to synthesise all the tapes. The researcher must transcribe and analyse the interviews while they are still fresh in his or her mind. Preliminary coding may be useful. Sometimes it can raise the credibility of the research to give a summary of the interview to the participant for approval. In this way, data saturation becomes more obvious. By employing qualitative analysis an attempt is made to capture the richness of themes emerging from the participant's talk, rather than reducing the responses to quantitative categories. Several approaches to content analysis are available. (See Chapter 24 for data analysis.)

3.5 Strengths and weaknesses of one-to-one interviews

The criticism that the interview is one of the weakest methodologies because the participant is likely to provide the researcher with the "official account" is not really valid. In trying to find out more about individual lives, what better way than to ask the individuals themselves? Interviews have particular strengths. They are a useful way of getting large amounts of data quickly and are an especially effective way of obtaining depth in data. However, interviews also have limitations. They involve personal interaction, and cooperation is therefore essential. Participants may be unwilling to share, and the researcher may ask questions that do not elicit the desired responses from participants. Furthermore, the responses could be misconstrued or even, at times, untruthful. Seidman (1998: 91) mentions a further aspect: that researchers must avoid the risk of changing the interviewing relationship into a therapeutic one. The goals of each are different. The researcher is there to learn not to treat the participant, and researchers are not likely to be trained therapists. However, even if researchers exercise such caution, the intimacy that can develop in in-depth interviewing sometimes threatens those limits, and a participant may find the interviewing process emotionally troubling. The researcher may decide not to do anything about this during the interview, or otherwise to pull back from whatever is causing the situation and divert the discussion. If the distress is severe, it might be necessary to refer the participant to a counsellor or therapist for support.

4. FOCUS GROUPS AS AN INTERVIEWING METHOD

Focus groups are group interviews. They are a means of better understanding how people feel or think about an issue, product or service. Participants are selected because they have certain characteristics in common that relate to the topic of the focus group. The group is "focused" in that it involves some kind of collective activity. The researcher creates a tolerant environment in the focus group that encourages participants to share perceptions, points of view, experiences, wishes and concerns without pressurising participants to vote or reach consensus (Barbour & Kitzinger 1999: 4, 5; Krueger & Casey 2000: 4; Monette et al. 2005: 186). A facilitator – also sometimes referred to as *moderator* by Krueger and Casey (2000), Morgan

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and Krueger (1998) and others – guides the interview, while a small group discusses the topics that the facilitator raises. What the participants in the group say during the discussions constitutes the essential data in focus groups (Morgan & Krueger 1998: Vol. 1: 1). The use of focus groups is not inherently superior to any other method, although they are particularly appropriate in certain contexts (Basch in Kingry, Tiedje & Friedman 1990: 125).

4.1 Definition

Krueger (quoted in Kingry et al. 1990: 124) defines the focus group as a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment. Morgan (1997: 6) describes focus groups as a research technique that collects data through group interaction on a topic determined by the researcher. Morgan and Krueger (1998: Vol. 1: 33) maintain that the most common abuse by far of the label "focus groups" occurs when it is applied to things other than research.

4.2 Reasons for using focus groups

There are three basic uses for focus groups (Morgan 1997: 2):

- They are used as a *self-contained* method in studies in which they serve as the principal source of data.
- They are used as a *supplementary* source of data in studies that rely on some other primary method, such as a survey.
- They are used in *multi-method* studies that combine two or more means of gathering data in which no one primary method determines the use of the others.

The use of focus groups is not appropriate for testing hypotheses or drawing inferences about larger populations. It is a method that can, however, be used for validating constructs prior to the development of more quantitative measures (Kingry et al. 1990: 125). It may be used for instrument development, illustration, sensitisation or conceptualisation. Focus groups allow the researcher to investigate a multitude of perceptions in a defined area of interest (Nyamathi & Shuler 1990: 1282).

The purpose of focus groups is to promote self-disclosure among participants. It is to know what people really think and feel (Krueger & Casey 2000: 7). Focus groups are useful when multiple viewpoints or responses are needed on a specific topic. These can be obtained in a shorter period of time than in individual interviews. Focus groups are capable of generating complex information at a low cost in a minimum amount of time (Kroll, Barbour & Harris 2007: 691). They are fundamentally a way of listening to people and learning from them, and of creating lines of communication. There is continual communication between the facilitator and the participants, as well as among the participants themselves. Focus groups rely on the principle of group process. Just as important, however, is a larger process of communication that connects the worlds of the researcher and the participants. It is thus important to understand that the actual groups are at the midpoint of a larger, three-part process of communication:

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1. The researcher decides what he or she needs to hear from the participants.
2. The focus groups create a conversation among the participants around these topics.
3. The researcher summarises what he or she has learned from the participants.

Throughout this process, the researcher's essential motivation should be a desire to listen and learn from the participants. Focus groups draw on three of the fundamental strengths that are shared by all qualitative methods:

1. Exploration and discovery
2. Context and depth
3. Interpretation

Focus groups create a process of *sharing and comparing* among the participants. The researcher creates them for a well-defined purpose and they produce large amounts of concentrated data in a short period of time – though not the richly textured view of life that comes from participant observation. What distinguishes focus groups from any other form of interview is the use of group discussion to generate the data. Group dynamics also frequently bring out aspects that would not have been anticipated by the researcher and would not have emerged with individuals (Babbie 2004: 309; DePoy & Gilson 2008: 110; Morgan & Krueger 1998: Vol. 1: 9, 10, 12, 32).

Focus groups should be seen as a way of closing the gap between people. They are a powerful means of exposing reality and of investigating complex behaviour and motivation. The interaction among participants often consists of their efforts to understand each other. Focus groups are especially useful in attempting to understand diversity, since they can help one understand the variety of others' experiences. The method is also a friendly and respectful one. Focus groups convey a willingness to listen without being defensive, which is uniquely beneficial in emotionally charged environments (Morgan & Krueger 1998: Vol. 1: 57–59). Sensitive research has traditionally relied on the use of one-to-one interviews. Focus groups have, however, shown that people may be more, rather than less, likely to self-disclose or share personal experiences in groups, rather than in dyadic settings. People feel relatively empowered and supported in a group situation where they are surrounded by others. They may also be more likely to share experiences and feelings in the presence of people whom they perceive to be like themselves in some way (Farquhar in Barbour & Kitzinger 1999: 47; Kroll et al. 2007: 692).

Krueger and Casey (2000: 24–25) list the following considerations regarding the use of focus groups:

Focus groups should be used when

- you are looking for a range of ideas or feelings that people have about something
- you are trying to understand differences between groups or categories of people
- the purpose is to uncover factors that influence opinions, behaviour or motivation
- you want ideas to emerge from the group
- you want to pilot-test ideas, materials, plans or policies
- you need information to help shed light on quantitative data already collected

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- the clients or intended audience place a high value on capturing the comments or language used by the target audience.

Focus groups should be avoided if

- you want people to come to consensus
- you want to educate people
- you do not intend to use the results, but instead want to give the appearance of listening
- you are asking for sensitive information that should not be shared in a group or could be harmful to someone if it is
- you need statistical projections
- the environment is emotionally charged, and a group discussion is likely to intensify the conflict
- you have lost control over critical aspects of the study
- other methodologies could produce better-quality information
- other methodologies could produce the same quality of information more economically
- you cannot ensure the confidentiality of sensitive information.

4.3 Myths about focus groups

The following are some of the myths that exist about focus groups (Morgan & Krueger 1998: Vol. 1: 45–54):

- *Focus groups are low cost and quick to set up.* A lot of planning needs to go into focus groups. The costs of recruiting participants could be high.
- *Focus groups require professional facilitators.* Experience is important, but the facilitator does not need to be a professional, particularly if he or she is also frequently involved in data analysis. It is especially useful when the facilitator's experience is directly relevant to the topics and participants in the project.
- *Focus groups require special facilities.* Focus groups can be conducted in any number of places.
- *Focus groups must consist of strangers.* There are important differences between conducting focus groups with strangers on the one hand, and acquaintances on the other. Strangers might be good for one purpose, but not necessarily for another.
- *Focus groups do not work for sensitive subjects.* Focus groups can in fact be a very useful tool for investigating sensitive topics. However, it is important to encourage appropriate self-disclosure, and to discourage disclosures that go beyond the legitimate aims of the research.
- *Focus groups produce conformity.* On the contrary, the focus is on encouraging people to share different points of view.
- *Focus groups must be validated by other methods.* This is part of a general myth that relegates all qualitative methods to a preliminary, exploratory role that prepares the way for "real" research.

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- *Focus groups tell you how people will behave.* In fact, they tell you how people *say* they will behave.

4.4 Approaches to focus groups

Calder (quoted in Nyamathi & Shuler 1990: 1283) identifies three approaches to focus groups:

- The *exploratory* approach is often conducted to pilot-test operational aspects of anticipated qualitative research, or to generate theoretical hypotheses for future research. When using this approach, focus groups are less structured.
- The *clinical* approach builds on the assumption that the real causes of behaviour must be understood through the sensitivity and clinical judgement of a trained professional. The traditional in-depth focus group thus serves as a device for obtaining specific information about the inner experiences of participants that is then subjected to clinical, scientific interpretations.
- The *phenomenological* approach is used to understand the everyday experience of the participant.

As a qualitative strategy, focus groups can precede quantitative procedures and can be used concurrently with quantitative research and after quantitative procedures, in order to provide insights into the meaning and interpretation of results. Most importantly, when used alone, focus groups are critical for obtaining insights into the perceptions and attitudes of people in a dynamic group interaction atmosphere.

4.5 Planning the focus groups

Careful planning with respect to participants, the environment and questions to be asked is crucial to conducting effective focus groups. Krueger (in Nyamathi & Shuler 1990: 1285) emphasises that writing down a plan is absolutely critical in ensuring that logic is followed and shortcomings are identified. Sharing the plan with colleagues allows valuable feedback and ensures the success of the strategy. Using a multifaceted approach and well-thought-out questions, which are primarily open ended, allows the participants freedom to respond from a variety of perspectives. Providing a well-focused environment for the participants is necessary to ensure a successful outcome.

Each of the four basic steps of focus groups – planning, recruiting and conducting the group, as well as analysing and reporting – needs its own planning process (Morgan & Krueger 1998: Vol. 2: 9–12; Kroll et al. 2007: 692).

The basic decisions in the planning process are the following:

- Define the purpose and outcomes of the project.
- Obtain permission.
- Develop the timeline for the project.
- Determine who the participants will be.
- Write the questions in the question guide.
- Develop a recruitment plan.

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- Set the locations, dates and times for the session.
- Design the analysis plan.

The specific tasks during the recruitment phase are the following:
- Define the target population.
- Define segments of the target population.
- Identify the appropriate composition of each group.
- Develop eligibility and exclusion criteria for individual participants.
- Make the initial recruitment contacts with potential participants.
- Determine the follow-up procedures that will ensure attendance.

The basic decisions associated with facilitating the group are as follows:
- Define the role of the facilitator.
- Decide if multiple facilitators will be needed for the project.
- Either train facilitators or select skilled ones.
- Develop the questions for the discussion guide.
- Identify external props or materials that will be used in the session.
- Clarify the arrangements for the location, recording equipment, and so forth.
- Determine what kinds of field note the researcher will generate.

The basic tasks related to analysis are the following:
- Estimate the amount of time devoted to analysis.
- Organise the field notes, tapes, transcripts and other data.
- Study the data to determine the key conclusions.
- Organise the products of analysis to match the format of the final report.

4.6 Participants

This section describes the recruiting of participants, the size of focus groups and the information that should be provided to the participants.

4.6.1 Recruiting participants for the focus groups

In order to decide who should be invited to the group, think back to the purpose of the study. Usually the purpose is to describe how certain people feel or think about something – people who have certain things in common (Krueger & Casey 2000: 70). Almost every aspect of a focus group depends on who the participants are. Recruitment issues have practical and budgetary implications (Kroll et al. 2007: 692). All other decisions are contingent on the composition of the focus group. The right group composition will generate free-flowing discussions that contain useful data. Like most qualitative methods, focus groups rely on purposive sampling. It is important, however, to create the conditions for easy, productive conversation, and to ensure that while participants are comfortable talking to each other, they also serve the researcher's goal. Homogeneity is also important. If participants perceive each other as fundamentally similar, they will spend less time explaining themselves to each other and more time discussing the issues at hand. Kingry et al.

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(1990: 124) refer to homogeneity as a key principle in forming focus groups. The homogeneity is determined by the purpose of the group. Ideally, the participants should not be familiar with one another. Regarding the use of strangers or acquaintances, it should be noted that acquaintances limit confidentiality and that friends might "pair up". Strangers, on the other hand, have to explain themselves to one another (Morgan & Krueger 1998: Vol. 2: 55–68).

In the case of too few people attending, the focus group will be an outright failure. Recruitment is a systematic process, therefore set meeting dates, times and locations before making contact with the participants. The traditional three-step strategy for recruitment is the following (Morgan & Krueger 1998: Vol. 2: 85–86):

- Two weeks before the actual group, the researcher should make contact with the participants.
- One week before, they should receive a confirmation letter from the researcher.
- On the day of the group the researcher should make a follow-up phone call to every participant.

In some cases it may be useful to hold screening interviews with potential participants. One thus ensures that the correct participants are selected, and that unwanted ones are eliminated.

4.6.2 Size of focus groups

Focus groups usually include six to ten participants. Groups this size allows everyone to participate, while still eliciting a range of responses. Morgan and Krueger (1998: Vol. 2: 71) mention that deciding on the right number of participants means striking a balance between having enough people to generate a discussion, and not having so many people that some feel crowded out. In making decisions about group size, it is useful to think concretely about how much time each participant will get to talk in the group. Smaller groups (four to six people) are preferable when the participants have a great deal to share about a topic or have intense or lengthy experiences related to the topic of discussion.

The number of participants per group also depends on the research question, the type of focus group guide used, and the degree to which the discussion is structured (Kroll et al. 2007: 693). The participants are selected on the basis of their relevance to the topic under study (Babbie 2007: 308). Morgan (1997: 42) considers the amount that each participant contributes to the group a major factor in decisions about the group size. Another key factor is how much detail the researcher needs to hear from each participant. Larger groups typically require a higher level of facilitator involvement, and it takes an experienced facilitator to control them without engaging in continual efforts at discipline. Whatever the size selected, it is important to over-recruit by 20 per cent to cover for no-shows.

4.6.3 Information to participants

Once people have agreed to participate in a focus group, the researcher's further contact with them will involve both giving and receiving information. The researcher requires all the participants' contact information. The following information would in turn be given to the participants: the subject of the research; who will

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be at the group; what is needed from the participants; what will be offered in terms of incentives, refreshments, and so forth; and what kind of future contact the researcher will have with them prior to the focus group to arrange the time and location (Morgan & Krueger 1998: Vol. 2: 96). The researcher could also give them the assurance that they may withdraw at any time and that support would be available after the group should they have the need to talk to someone.

4.7 Number of focus groups

The number of focus group meetings necessary for a particular study varies and depends on the research aims or purpose of the study. Krueger (quoted in Kingry et al. 1990: 124) suggests, as a rule of thumb, four group meetings with re-evaluation after the third. The greatest amount of new information usually comes in the first two group meetings, with considerable repetition after that. Morgan and Krueger (1998: Vol. 2: 77–83) say that there is no hard-and-fast rule. Conducting too few focus group meetings may result in something being missed or lead to premature conclusions, but doing too many is obviously a waste of time and money.

Sometimes, the only way to find out if more focus group meetings are required is to try it and find out. The more diverse the responses, the more groups that will be required in order to know what people are saying. One should plan to use more groups whenever there is a diverse range of responses to a topic. The safest reason for using fewer groups is a lack of diversity in responses. If the discussion reaches saturation and becomes repetitive after two or three groups, there is little to be gained by increasing the number of groups. It could be risky, however, to conduct just one group, although it would not necessarily be wrong. The data must then specifically be interpreted as what that unique group had to say, and not what other people would have to say. It is essential that data be interpreted cautiously. Morgan (1997: 44), however, cautions against the use of only one group.

The problem with having only one group is that it is impossible to tell whether the discussion reflects either the unusual composition of that group or the particular dynamics of that unique set of participants. On the other hand, the researcher would be wise to stop collecting data when he or she can accurately anticipate what will be said next in the group (Morgan 1997: 43). Morgan (1997: 44) further states that a different set of issues is that regarding the sheer availability of participants. In general, the goal is to have only as many groups as are required to provide a trustworthy answer to the research question. The crucial concern is not the amount of data but rather the richness of data; not the total counts but the detailed descriptions.

4.8 Group facilitation

The group facilitator, the facilitation team and group facilitation techniques will now be discussed.

4.8.1 Group facilitator

The group facilitator is also known as a moderator. In focus groups, the group facilitator can either be an experienced person or the researcher him- or herself, should he or she have the necessary communication and group facilitating skills. Krueger

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(quoted in Morgan & Krueger 1998: Vol. 4: 41–44) says that facilitators should be comfortable and familiar with group processes. They should possess a curiosity about the topic and the participants. They must be able to communicate clearly and precisely, both in writing and orally. Friendliness and a sense of humour are valuable assets. Talented facilitators are truly interested in people. They are committed to multiple realities and thus open to new ideas. They should be good listeners. In addition to this, Krueger and Casey (2000: 98–100) mention that facilitators should have empathy and a positive regard for the participants. They must have adequate background knowledge on the topic of discussion to place comments in perspective and follow up on critical areas of concern. They must have the ability to listen and the self-discipline to control personal views. The participants must, above all, feel comfortable with them.

4.8.2 The group facilitation team

It might be useful to consider a facilitating team consisting of the facilitator and an assistant facilitator, each with certain tasks to perform. The facilitator is primarily concerned with directing the discussion and keeping the conversation flowing (Krueger & Casey 2000: 101). An assistant may assist the facilitator in handling distractions and also act as a backup to the taped communication (Nyamathi & Shuler 1990: 1282). When selecting the assistant facilitator, consideration should be given to characteristics different to those of the facilitator. The assistant could be referred to as a recorder, observer, analyst and even consultant (Morgan & Krueger 1998: Vol. 4: 69–70). The assistant facilitator thus takes comprehensive notes, operates the tape recorder, handles environmental conditions and logistics, and responds to unexpected interruptions. The assistant plays a key role during the post-meeting analysis of the session (Krueger & Casey 2000).

4.8.3 Group facilitation techniques

Group facilitators should be skilled in group processes, as well as feel comfortable and familiar with these processes. They encourage the expression of different opinions, helping group members to be more specific in their responses, and explore the reasons underlying particular viewpoints (Kingry et al. 1990: 125). Facilitators must direct discussions, encourage participation and probe participants without biasing responses. They must be able to exert a mild yet unobtrusive control over participants. Moreover, they must be able to communicate clearly and be adequately knowledgeable about the topic of conversation. It is critical that they manage to preserve a fine line between following a study guide and maintaining group enthusiasm and interest (Nyamathi & Shuler 1990: 1285). It is the facilitators who must keep the discussion flowing and make sure that one or two persons do not dominate the discussion. They have the difficult task of dealing with dynamics that constantly evolve. They must also deal with problems by constantly checking behaviour against attitudes, challenging and drawing out responses with opposite views, and looking for the emotional components of responses (Stewart & Shamdasani 1990: 70). Focus groups should emphasise the information the researcher wishes to obtain, rather than be driven by the needs of group members (Cohen & Garrett 1999: 361).

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The communication skills mentioned under the one-to-one interviews are also applicable to focus groups.

4.9 Question development

In contrast to the phenomenological "lived experience" approach, focus group methodology is more directed at and designed to explore specific topics or issues. Carefully formulated and sequenced questions based on the purpose of the study are necessary to elicit a wide range of responses. Authors vary in their opinions about the use of literature or not. Kingry et al. (1990: 124) suggest that questions should be based on a review of the literature and consultation with content experts. The same principles that are stated under the interview schedule should be taken into consideration when developing the questions.

It is very important to decide on the degree of structure of a focus group. Depending on how the researcher writes the questions in the interview guide and how the facilitator leads the group, the focus group can be more structured when the researcher's interests predominate, or less structured when the participants' interests have priority, thus ranging from unstructured to structured. Structure thus includes both questions and facilitator style (Babbie 2007: 308; Morgan & Krueger 1998: Vol. 2: 43). Salmon (2007: 986) expresses the need of the researcher to be open to participants, leading them in changing the questions.

4.9.1 Principles for developing the questions for focus groups

Clear and thoughtful questions are the foundation of high-quality focus group research (Morgan & Krueger 1998: Vol. 3: xix, 3–9; Krueger & Casey 2000: 40–42). Before actually writing the questions for a focus group interview, the researcher should consider several principles:

- Ask questions in a conversational manner. Because the focus group is a social experience, conversational questions are essential to create and maintain an informal environment.
- Effective questions are clear. The wording of the questions should be direct, forthright, comfortable and simple. Clear questions are usually short, one-dimensional and jargon free. The question should be limited to a single dimension in a language familiar to the participants.
- Help is necessary in developing quality focus group questions. The researcher needs to obtain feedback from others, such as participants, experts or members of the research team.
- Quality questions are not produced quickly. The researcher often underestimates the amount of time needed for this. Sometimes revision takes place several times.
- What works is right. There is no "right" way to develop questions. What is right is what works.
- Questions should use the words the participants would use when talking about the issue. The questions must be easy to say, short and usually open-ended.

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SECTION D

4.9.2 Questioning strategies

Two different questioning strategies are currently in use. The *topic guide* is a list of topics or issues to be pursued in the focus group, for example impression of quality service. By contrast, the *questioning route* is a sequence of questions in complete, conversational sentences, for example "In recent years we have often heard the words *poor health delivery*. When you hear this, what comes to mind?" (Morgan & Krueger 1998: Vol. 3: 9–10). A good questioning route has certain qualities. It has an easy beginning, is sequenced, moves from general to specific, and uses the time available wisely (Krueger & Casey 2000: 42–43).

4.9.3 Developing the questions

When researchers start developing questions they should realise that they are going through a process: clarify the problem; begin to identify the questions by brainstorming; prepare first draft questions by phrasing them; sequence them; estimate the time needed for questions; get feedback from others by sharing; test the questions; revise. Focus on opening, introductory, transition, key and ending questions (Morgan & Krueger 1998: Vol. 3: 22; Krueger & Casey 2000: 56–65). Perhaps the most distinctive feature of the focus group is the open-ended question technique. Participants could be asked to "think back" and to reflect on a personal experience and then to respond to a specific question. Always avoid asking "why" questions, and keep questions simple. Simple questions do not yield simple answers. Be cautious about giving examples (Morgan & Krueger 1998: Vol. 3: 31–35).

It is important that the researcher knows the limits when developing questions. Focus groups are typically 60 to 120 minutes long. Do not go beyond the two-hour maximum. Culture greatly influences the kinds of question that are appropriate in a focus group. One primary constraint in conducting focus groups is that the facilitator must understand the language. Conducting focus groups through an interpreter is not only difficult and tedious, but also of questionable research value (Morgan & Krueger 1998: Vol. 3: 49–51). The general rule of thumb is to maintain as much consistency as possible throughout the series of focus groups, for it is in comparisons and contrasts that themes and patterns emerge from the data. The only time questions should be changed is when they clearly do not work, or when theoretical saturation occurs (Morgan & Krueger 1998: Vol. 3: 53–56). It is suggested that fewer than ten questions should be included.

4.9.4 Piloting in focus groups

Pilot testing focus group questions is difficult. Although pilot testing is a cardinal rule of research, it presents special problems with focus groups. The questions used in focus group interviews are hard to separate from the environment of the focus group. The true pilot test is the first focus group with the participants. Krueger (quoted in Morgan & Krueger 1998: Vol. 3: 58) suggests pilot testing with research team members, experts and potential participants.

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4.10 Environment

Focus groups should be held in a comfortable, non-threatening setting. Because ses-

sions last from one to three hours, the comfort of participants is important (Kingry et al. 1990: 124).

The location of focus groups must meet the needs of both the researcher and the participants. For the researcher, the primary concerns are the ability to hold the discussion and capture data. For the participant, comfort is the main concern. Locations could include professional facilities, existing meeting rooms or people's homes. No matter what the location, always consider providing food, since eating together tends to promote conversation and communication within the group (Morgan & Krueger 1998: Vol. 2: 121–128).

4.11 Conducting the focus group

When experienced facilitators conduct the focus group they are relaxed, in control, friendly, having fun and getting participants to tell all about themselves. However, effective facilitating requires complex skills. The guiding principles of facilitation are as follows (Morgan & Krueger 1998: Vol. 4: 3–7):

1. Be interested in the participants and show positive regard.
2. Be a facilitator, not a participant.
3. Be ready to hear unpleasant views.
4. Accept that you cannot facilitate all groups.
5. Use your unique talents.

Before conducting the group, facilitators need to prepare themselves mentally. They should minimise the risk of unexpected pressures that might limit their ability to concentrate. They must be completely familiar with the questioning route and be ready to listen and think simultaneously. They must ensure that equipment is in working order and available. In focus groups, recording equipment is essential. It is useful to have two tape recorders (one battery operated and one electrically operated) running simultaneously in case of mechanical or electricity failure. Facilitators must also ensure that the room is ready. This would include the placement of chairs, eliminating disturbance, having refreshments available and setting up the recording equipment (Morgan & Krueger 1998: Vol. 4: 9–14).

Small talk is essential just prior to the group discussion. The function of small talk is to create a warm and friendly environment and to put participants at ease. The participants' interaction with one another could also be observed during this time. The first few moments in the focus group are critical. The way facilitators present themselves sets the tone for the entire focus group session. They must build rapport in the group, and in a short time create a thoughtful, tolerant atmosphere, provide the ground rules, and set the tone of the discussion (Morgan & Krueger 1998: Vol. 4: 15–21). Morgan (1997: 49) mentions that it is wise to keep both the introduction and the instructions as brief as possible. A too-lengthy discussion can create the expectation from the group that the facilitator will be telling the group what to do. The group session is opened with brief comments about exactly what information is sought from the participants. Informing the group of the purpose of the study early on is critical in eliminating assumptions about the nature of the study. It is important to make all group members feel that their contributions are

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valued, and to give permission to group members to express themselves without fear that their ideas will be openly criticised (Kingry et al. 1990: 124). It should be stressed to participants that there are no wrong answers.

For the success of the focus group, group facilitators must tap into the attitudes and perceptions of the participants as they relate to their needs in terms of products, services or programmes (Nyamathi & Shuler 1990: 1282). Facilitators are advised to anticipate the various directions the discussion may take, and to be able to recognise promising topics of discussion as opposed to dead ends. Facilitators should be attentive to how they themselves respond to comments from participants, both verbally and non-verbally. Be comfortable with a pause, as it often prompts additional points of view (Morgan & Krueger 1998: Vol. 4: 25). Exercises provide a different way of gathering information and could be enjoyable and productive supplements to questions (Colucci 2007: 1422). DePoy and Gilson (2008: 111) mention several structural and process elements they found helpful in guiding the focus group: (a) vignettes to provoke thinking and discourse; (b) debate about specific issues; (c) closed-ended questioning to obtain targeted information; and (d) role-playing activity to reveal attitude and cultural role expectations.

At the end of the session it is helpful for the facilitator to summarise briefly the main points of view, seek verification and express gratitude for participation (Nyamathi & Shuler 1990: 1285). An additional tactic mentioned by Krueger (quoted in Morgan & Krueger 1998: Vol. 4: 31) is to ask the "final question". After the summary the question: "Have we missed anything?" could be asked.

As soon as the participants have left, the facilitator and assistant should debrief by discussing the focus group. Aspects such as themes are discussed, as well as whether the group provided what was expected, what should be included in the report, whether there were any unexpected findings, and if anything should be done differently for the next group (Morgan & Krueger 1998: Vol. 4: 34).

4.12 Field notes

The assistant facilitator should take detailed field notes during the focus group session. After the group, the facilitator should take notes as well. Both parties can then discuss their notes. It is important that this be done as soon as possible after the focus groups. In focus groups the notes should include the following:

1. Seating arrangements
2. The order in which the people speak, to aid voice recognition
3. Non-verbal behaviours such as eye contact, posture, gestures between group members, crying, fidgeting
4. Themes that are striking
5. Highlighting as much of the conversation as possible

Attention should also be given to the dynamics that took place in the group. Field and Morse (1994) describe field notes as a written account of the things the researcher hears, sees, experiences and thinks in the course of collecting or reflecting on the data obtained during the study.

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4.13 Analysing the data

Analysis begins by going back to the purpose of the study. A key principle is that the depth and intensity of analysis is determined by the purpose of the study (Krueger & Casey 2000: 127). The analysis and interpretation of focus group data can be very complex. The data from focus groups can be thought of as potentially incompletely collected. What is collected, though possibly subject to some constraints, represents the reality of the experiences of the group members (Morse 1994: 234). The aim of analysis is to look for trends and patterns that reappear within a single focus group or among various focus groups. Recording of the session by tape recorders is recommended, as well as field notes at the conclusion of the session. The basis for analysis is transcripts, tapes, notes and memory. In qualitative research we strive to be open to the reality of others. We seek to tell someone else's story, but must listen before we can understand. The critical ingredients of qualitative analysis are that it must be systematic, sequential, verifiable and continuous; requires time; is jeopardised by delay; seeks to enlighten; should entertain alternative explanations; is improved by feedback; and is a process of comparison (Morgan & Krueger 1998: Vol. 6: 3–17; Krueger & Casey 2000: 128; 130).

There is a danger of assuming that the focus group should be analysed in the same way as the transcript of an individual interview. Focus group analysis combines many different elements of qualitative research and, in addition, adds the complexity of group interaction. In analysing, the researcher should consider the words, the context, the internal consistency, frequency of comments, extensiveness of comments, specificity of comments and what was not said, as well as finding the "big idea" (Morgan & Krueger 1998: Vol. 6: 31). Krueger and Casey (2000: 132) mention the long-table approach (where all data are coded and sorted on a long table) and the computer as strategies for analysis.

The analysis must not only focus on the group. Morgan (1997: 60) emphasises that the discussion in the focus group depends not only on the individuals that make up the group, but also on the dynamics of the group as a whole. Analytic efforts must thus seek a balance that acknowledges the interplay between these two levels of analysis. In coding, attention must be given to all mentions of a given code; each individual's mention of a given code; and each group discussion contained in a given code. Barbour and Kitzinger (1999: 16) also mention that analysis will involve, at the very least, drawing together and comparing discussions of similar themes, and examining how these relate to the variation between individuals and between groups.

4.14 Strengths and weaknesses of focus groups

The strength of relying on focus groups is their ability to produce concentrated amounts of data on precisely the topic of interest. Another strength is reliance on interaction in the group to produce the data. The comparisons the participants make between one another's experiences and opinions are a valuable source of insight into complex behaviours and motivation (Morgan 1997: 13; 15). The group may provide a stimulating and secure setting for members to express ideas without fear of criticism.

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SECTION
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The synergy of the group has the potential to uncover important constructs, which may be lost with individually generated data. The group also helps uncover dynamic emotional processes, which determine behaviour to a large extent. Focus groups create a fuller, deeper understanding of the phenomenon being studied (Kingry et al. 1990: 125), and they stimulate spontaneous exchanges of ideas, thoughts and attitudes in the "security of being in a crowd" (Nyamathi & Shuler 1990: 1284).

On the other hand, focus groups can be quite costly and require researchers who are skilled in group processes. Bias may also be a problem. Nyamathi and Shuler (1990: 1284) mention that a disadvantage is that findings cannot automatically be projected onto the population at large. If the group facilitator is unskilled, expressions of only the active participants may be voiced. This creates the risk that passive participants may be unduly influenced or inhibited by active participants. Another criticism of focus groups cites participants' social posturing or desire to be polite and fit in with the norm, or else their forced compliance.

4.15 Modifications in focus groups

Modifications that have merit in certain situations include periodically repeated groups, focus groups with dual facilitators, telephone focus groups and Internet focus groups (Krueger & Casey 2000: 187). Both asynchronous and synchronous groups are utilised online (Fox, Morris & Rumsey 2007: 539).

The asynchronous groups might be advantageous in embracing slow typists, overcoming time zone differences, and generating detailed and reflective answers. What is debatable is whether they actually constitute a focus group (Fox et al. 2007: 539).

The online focus group is fast gaining momentum as a synchronous method. The focus group runs in a chat room in real time. This method provides an alternative way of conducting research with individuals who are unwilling to engage in conventional face-to-face focus groups. The group interactions are characterised by dynamism and immediacy. Moderating synchronous focus groups requires relatively fast typing skills and some experience with the style of real-time discussions. The distinction between replying and sending becomes blurred as interactivity defies conversational turn-taking (Bampton & Cowton 2002; Fox et al. 2007: 539; Mann & Stewart 2000: 102).

SUMMARY

This chapter offers an introduction to interviewing in qualitative research in general, including several valuable techniques and hints, followed by the communication techniques required by the interviewer. It discusses a number of common pitfalls in interviewing, and the content versus the process of the interview.

The one-to-one interview as an information-collection method is presented in detail, and various types are described: the unstructured one-to-one interview, the semi-structured one-to-one interview, and the ethnographic, e-mail, telephone, and the convergent interview. Several technical matters pertaining to all types of the one-to-one interview are discussed, such as tape recording interviews, making field

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notes and analysing interviews, and the strengths and weaknesses of the one-to-one interview.

Finally, focus groups as an interviewing method are discussed in much detail, so much so that the section can be viewed as a how-to manual on the use of focus groups in qualitative research. Prospective researchers should find this an invaluable tool whenever they consider using focus groups as an information-collection method.

Self-evaluation and group discussion

You have selected the *one-to-one interview* as the main data collection method for the qualitative study you intend to undertake. Explain the following:

- The nature of the study you are undertaking
- Why you decided on the particular research problem
- How the one-to-one interview will be applied in your specific study

You have selected the *focus group interview* as the main data collection method for the qualitative study you intend to undertake. Explain the following:

- The nature of the study you are undertaking
- Why you decided on the particular research problem
- How the focus group interview will be applied in your specific study

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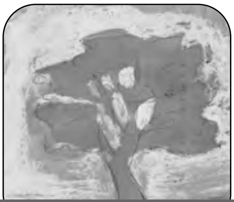

22

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Information collection: document study and secondary analysis

Learning objectives

Studying this chapter should enable the reader to

- distinguish between document study and secondary analysis
- distinguish between personal documents, official documents, mass media and archival material as sources for document study
- distinguish briefly between different techniques for analysing documents
- become acquainted with the practical steps of analysing documents
- assess the advantages and disadvantages of document study
- briefly study the process of secondary analysis
- assess the advantages and disadvantages of secondary analysis.

1. INTRODUCTION

Within the context of qualitative research, observation and interviewing are usually used to collect the relevant data. The third and fourth methods of data collection that often are neglected are the study of documents and secondary analysis. The latter denotes the analysis of any written material that contains information about the phenomenon that is being researched.

The two procedures are sometimes confused with each other and the concepts seem to overlap to some extent. The terms *life history*, *historical research, data archiving* (Monette, Sullivan & DeJong 2005: 195), *document analysis* (Ritchie & Lewis 2003: 35) and *documents of life* are also found in the literature in this field. Apart from small differences, all these terms denote more or less the same concept, but in this chapter we distinguish between document study and secondary analysis. By using a combination of procedures, such as document study, secondary analysis,

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observation and interviewing, the researcher can much more easily validate and cross-check findings. Each data source has its strengths and weaknesses, and by using triangulation the strengths of one procedure can compensate for the weaknesses of another approach (Patton 2002: 306).

2. DOCUMENT STUDY

2.1 Definition

According to Ritchie and Lewis (2003: 35), documentary analysis involves the study of existing documents, either to understand their substantive content or to illuminate deeper meanings which may be revealed by their style and coverage. Most documents are, however, not written with a view to research (Marlow 2005: 182). For instance, personal documents such as letters to friends or family, diaries (Babbie & Mouton 2001: 301), confessions, suicide notes and autobiographies (Sarantakos 2000: 275) are written for personal reasons.

A variety of non-personal documents such as minutes of meetings, agendas, newsletters and internal office memos are written with a view to the continual functioning of an organisation or for the execution of a particular matter. A third group of documents aimed at the mass media, such as newspapers and magazines, are primarily written with a view to informing the public or a selected section of the public. However, if these documents are studied and analysed for the purposes of scientific research, the method of document study as a data collection method becomes operative. This is particularly useful where the history of events or experiences has relevance and where events cannot be studied by direct observation or interviewing (Ritchie & Lewis 2003: 35).

2.2 Sources of document study

A wide range of documents is available to the social researcher, and a variety of classifications of sources of document study is found in relevant literature. Neuman (2000: 395) classifies sources as primary and secondary sources. Primary sources are seen as the original written material of the author's own experiences and observations, while secondary sources consist of material that is derived from someone else as the original source. Although there may be some grey areas in the primary–secondary distinction, the difference between the two is generally clear. For example, an autobiography is clearly a primary document, while a biography is a secondary document. According to Strydom (1997: 227), this implies that a primary source should therefore be more reliable than a secondary one. Since secondary sources are always someone else's interpretation of primary sources, secondary sources should be thoroughly scrutinised for accuracy.

Creswell (2003: 188) as well as Jupp (2006: 79) make a distinction between private and public documents, while Ritchie and Lewis (2003: 35) distinguish between public documents (e.g. government publications), procedural documents (e.g. minutes of meetings) and personal documents (e.g. letters or diaries). Based on the classification of the authors mentioned above, we present the following synthesised classification of sources for document study.

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SECTION D

2.2.1 *Personal documents*

Babbie and Mouton (2001: 300) define personal documents as human or personal documents in which the characteristics of somebody who is in some sense the author of the document finds expression, so that through its means the reader of the document comes to know the author and his or her views with which the document is concerned. According to Jupp (2006: 79), personal or private documents produce evidence of the way lives are lived and how the social world is engaged with by individuals and social groups at different times and in different places. Personal documents are thus a personal account of the authors' environment and their subjective perception and interpretation of their own life and the events in the world around them. Strydom (1997: 227) rightly observes that the researcher is allowed by the individual to whom the document belongs to dip into it and, to a greater or lesser degree, use certain parts of it for research purposes.

Personal documents include the following wide spectrum of sources: personal letters, diaries, autobiographies, e-mail discussions, memos, verbal communications, photographs, films, personal video recordings, biographies, children's schoolwork, old Bibles with detailed genealogies, bronzed baby shoes and other sentimental objects, graffiti, memoirs, letters to the press, inscriptions on tombstones or monuments, letters of confession, shopping lists, travelogues and folk tales (Babbie & Mouton 2001: 300; Creswell 2003: 187; Gravetter & Forzano 2003: 38; Jupp 2006: 79; Patton 2002: 293; Strydom 1997: 227–228).

The nature, contents and scope of personal documents may vary. According to Holbrook (1995: 747), personal documents may be solicited or unsolicited, limited or comprehensive, complete or edited. Authors may be a famous public figure or an ordinary person on the street; they may be still alive or already dead. They may be selected randomly or chosen deliberately to represent a certain category, problem or characteristic. They may be selected as a result of a chance discovery, or could even be a volunteer. Whatever the situation may be, the researcher should always remember that documents of a private or personal nature, such as diaries, medical records or prescriptions, need to be treated with the utmost care and with the full ethical implications in mind (Henning 2004: 99).

Babbie and Mouton (2001: 303) present a perceptive version of the usefulness and value of personal documents that can be briefly summarised as follows:

- They serve as a touchstone for the evaluation of theories, hypotheses and assumptions.
- They enable the researcher to probe into the phenomenological heart of a human phenomenon.
- They complement objectivity with subjectivity in the research process. The complementing element can be seen as balancing the objectivism of the instrument, the survey and participant observation with the internal, covert and reflective elements of social behaviour and experience.
- They provide us with a holistic and total perspective of a person in the context of his or her total life.
- They add to the sensitising of concepts, theory development and verification: "Beginning with vague, yet genetic concepts, social scientists can derive person-

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alisations from the subject's point of view – thus allowing the subject's meanings to be attached to a conceptual framework" (Babbie & Mouton 2001: 303).

2.2.2 Official documents

Official or non-personal documents imply those that are compiled and maintained on a continuous basis by large organisations such as government institutions. Such documents are more formal and structured than personal documents. They include minutes and agendas of meetings, inter-office memos, financial records, statistical reports, annual reports and process records. Records such as marriage certificates, driver's licences, building contracts and bank statements can be included in this category.

The accessibility of official documents is often a problem due to legislation on the confidentiality of information – an aspect that the qualitative researcher should always keep in mind.

2.2.3 Mass media

This category of documents includes all information that is freely available to the public and thus to any individual (Strydom 1997: 228). According to Jupp (2006: 79), the continuing development of technology and the recent expansion of telecommunications and the mass media have added to the amount and number of forms that documents take, from the hand production of written and visual documentation to the mechanical production of printed material and reproduction of mass media documents. Radio, cinema and television generate a prolific 21st-century display of visual, textual, oral and sonic document forms. As with all documents, the different forms of mass media have a variety of social functions, including information, leisure and social control. A television advertisement, for instance, is an ubiquitous example of a mass media document, loaded with commercial and social information, styles, ideas, attitudes, values, persuasions and ideologies, and circulated widely through multiple broadcasts and receptions. Websites represent commercial, governmental, educational and other organisational interests, and exist alongside personal websites and individually managed "blogs", the frequently updated Web journals, that make up the pages of virtual documentation (Jupp 2006: 80). Other forms of printed and audio-visual mass media include newspapers, magazines, journals and newsletters, as well as books of fiction and non-fiction. So there is a wide range of mass media documents waiting to be analysed. However, researchers should remember that some of these documents can be subjectively coloured because of the possible subjectivity of the person responsible for the compilation of the news item, article or film. If, however, the producers focus on factual data, mass media can be viewed as excellent sources of information (Strydom 1997: 228).

2.2.4 Archival material

Archival material comprises documents and data preserved in archives for research purposes. Over the last decade, a number of data archives have been established, many with computerised information that is easily retrieved and readily available to the researcher.

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2.3 Evaluation of documents

When documents are studied, it is of cardinal importance that the researcher evaluates their authenticity, credibility, representativeness and meaning. The researcher should establish the authentic nature of a document, namely that it was produced by the author or authorising body ascribed to it. He or she should also evaluate the encoding process, the procedure for selection and putting into place the words, images or other elements that make up the content of the document. According to Jupp (2006: 80), the credibility of a document as evidence hinges on the truth and accuracy of its reference and how widely it represents the phenomena the researcher is investigating. For example, questions of authenticity regarding an inscription on a public building or monument commemorating a historical event may be few but questions of why, how and whose interest the document serves may be many.

There are different ways in which the credibility, validity and reliability of documents can be tested. Babbie and Mouton (2001: 285–286) recommend, inter alia, the following:

- If the author is still living, he or she can be requested to read the whole product and present an auto critique.
- It is sometimes possible to compare the relevant document with other written documents or data collected in other ways.
- Another technique is to verify data by interviewing other informants, persons in the same roles or persons knowledgeable on the subject, or who were personally involved in the event. The content of the document is thus compared with an external source.
- According to Bailey (1994: 318), the reliability of documents may be checked either by similar documents at two or more points in time (instrument reliability) or by comparing the results of two or more researchers at the same points in time (analyst reliability). In view of the fact that the analysis of documents is often a rather subjective process, Bailey (1994: 319) recommends that more attention be paid to the assessment of inter-analyst reliability than to the assessment of inter-document reliability.

2.4 Techniques for analysing documents

According to Henning (2004: 101), the true test of a competent qualitative researcher comes in the analysis of the data, a process that requires analytical craftsmanship and the ability to capture an understanding of the data. This is specifically true when a researcher is busy with document analysis.

There are different techniques that a researcher may be use to analyse documents. Depending on the goal of the study the following techniques, according to Jupp (2006: 80), can be used:

- *Content analysis* of documents will tend towards a systematic and enumerative approach in order to quantify the frequency of elements within documents (such as words or images) or the quantity of similar types of document. It refers to the method of transforming the symbolic content of a document, such as words or

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other images, from a qualitative, unsystematic form into a quantitative, systematic form (Monette et al. 2002: 207). Typically, this kind of analysis is concerned with the manifest content of a document and is usually associated with the positivist tradition of social research.

- *Textual analysis* is usually thought of as being part of the qualitative and interpretivist tradition. Here emphasis is less on the number and frequency of occurrences and more on interpreting the meaning the document might have.
- *Semiology,* the study of signs, identifies words and especially images as signs that offer complex meanings or significance beyond the surface of the text.
- *Linguistic analysis* explores the use and meaning of words and phrases in a document.

Sometimes, however, depending on the goal of a study, a combination of techniques might be the correct way of analysing a document, for example the analysis of a television advertisement as a social document might require both content and textual analysis to give an indication of its frequency and potency.

2.5 Practical steps in analysing documents

According to Rapley (2008: 130–131), a researcher may find the following practical steps or actions useful in studying documents:

- *Formulate your initial research questions.* Your research questions may be subject to change over the course of your study.
- *Start a research diary.* Routinely make notes of all your courses of action and (analytic) thoughts over the period of the research.
- *Find possible sources of material and begin to generate an archive.* This material will be obtained by gathering pre-existing material (e.g. documents, audiotapes or videos) and/or generating the material yourself by recording interactions (e.g. audiotapes or videos). Part of your archive will also be material obtained from academic sources as well as other “non-academic” discussions (e.g. notes on a radio programme) of topics in your research.
- *Transcribe the texts in some detail.* Some texts, however, especially existing documents, may not require any transcription.
- *Critically read and interrogate the texts and documents.* Re-read the texts and documents.
- *Code.* In the initial stages be as inclusive as possible. Do not worry if you have overlapping codes. Then use the constant comparison method to develop a comprehensive and systematic coding scheme.
- *Analyse* by (a) examining regularity and variability in the data; and (b) forming tentative findings. You will never be able to do a detailed analysis on everything you find. Remember that you can go back to your archive repeatedly to follow up anything you did not have time to investigate previously.
- *Check credibility, validity and reliability* through (a) deviant case analysis; (b) comparing your findings to previous work; and (c) showing other people your

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data and discussing your findings with them. These "other people" will generally be your academic peers or supervisor but they may also be your research participants.

- *Write up.* Reflect on your own analysis and write up your findings.

2.6 Advantages of document study

The advantages of document study are, briefly, as follows:

- *Relatively low cost.* Although the cost of document study is influenced by factors such as the dispersion and availability of documents, the type of document that is being studied and the distance that needs to be covered in order to obtain the documents, document study is relatively more affordable than, for instance, a comprehensive survey (Monette et al. 1994: 204).
- *Confession.* According to Bailey (1994: 295–296), a person may be more likely to confess in a document, particularly one to be read only after his or her death, than in an interview or mailed questionnaire. Thus a study of documents such as diaries, posthumously published autobiographies and suicide notes may be the only way to obtain such information.
- *Non-reactivity.* Unlike surveys or experiments where respondents are aware of the fact that they are being studied, producers of documents do not necessarily anticipate the analysis of their documents at a later stage. The contents of the documents are thus not affected by the activities of the researcher (Bailey 1994: 295; Monette et al. 1998: 204).
- *Inaccessible subjects.* One of the basic advantages of document study is the fact that it is the only method in which the researcher does not need to make personal contact with the respondent/s. Through document study the researcher can study civilisations of long ago as well as the behaviour of people who are already dead.

2.7 Disadvantages of document study

As with all data-collection techniques, document study also has disadvantages, of which the most important, as discussed by Bailey (1994: 296–298) and Monette et al. (1994: 205–206), are the following:

- *Incompleteness.* Reports, statistical records and historical documents are often incomplete, which means that there are gaps in the database that cannot be filled in any other way. A problem with many personal documents such as letters and diaries is that they were not written for research purposes but were intended to be private or even secret. Both of these kinds of document often assume specific knowledge that researchers unfamiliar with certain events will not possess.
- *Bias.* Since documents were not intended for research purposes, there are factors that can influence their objectivity. For example, autobiographies may be written with a view to making money, or annual reports of organisations may be formulated to influence consumers positively.

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- *Preservation of documents.* Written documents may be destroyed by elements such as fire, floods or storms, and ordinary letters, diaries or reports may become illegible over time (Royse 2004: 213).
- *Lack of availability.* In some fields of study, documents are simply not available because records were never kept. In other cases records were kept, but are classified or inaccessible for security reasons.
- *Lack of linguistic skills.* In documentary study researchers are dependent on the ability of respondents to write and to formulate clearly and meaningfully, since these are the only data available to them. Lack of linguistic skill may thus negatively influence the contents of documents and their researchability.
- *Lack of a standard format.* Documents differ quite widely as regards their format. Some documents, such as newspapers, appear in a standard format, and such standardisation facilitates comparison over time for the same newspaper, and comparison between different newspapers at any one point in time. However, many other documents, particularly personal documents, have no standard format. Comparison is then difficult or impossible, since valuable information contained in a document at a particular point in time may be entirely lacking in an earlier or later document.
- *Origins of documents.* It is often impossible to ascertain critical factors such as the origin or the date of documents.
- *Bulk of documents.* It often happens, especially with official documents, that they are stored in great volume over a period of time in a particular place. Such documents are often incomplete, unorganised and in various stages of deterioration – a situation that encumbers research or even makes it impossible.

3. SECONDARY ANALYSIS

3.1 Definition

Alston and Bowles (2003: 186), Babbie (2007: 277), Hakim (2000: 24), Neuman (2003: 37), Royse (2004: 211), Rubin and Babbie (2005: 283) as well as Walliman (2006: 52) refer to secondary analysis as the reworking of already analysed data over which the present researcher had no direct control or in which he or she had no direct involvement. Secondary analysis is thus an empirical exercise on data already collected, and the researcher normally starts when the primary analysis of the data has been completed (Gravetter & Forzano 2003: 38; Marlow 1993: 81; Neuman 2000: 305; Thomas & Smith 2003: 225).

Secondary analysis can be valuable by providing an opportunity to bring new perspectives to existing data, to use elements of the data that have not been fully analysed or to form a base for comparison with newly collected data (Ritchie & Lewis 2003: 61). The re-analysis of the existing dataset is done by another researcher with a purpose different from that of the primary analysis (Babbie 2007: 277; Bailey 1994: 299; Bless & Higson-Smith 2000: 156; Marlow 2005: 182; Ritchie & Lewis 2003: 76; Welman, Kruger & Mitchell 2005: 149). It is essential to make an assessment of the quality of the primary data and to make sure how much the original source of the data can be trusted (Salkind 2000: 190; Walliman 2006: 53).

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Quantitative and qualitative data can be equally effectively utilised in secondary analysis (Bechhofer & Paterson 2000: 62). The mass of information gathered daily by social workers, for instance, offers rich research possibilities for those social workers interested in collecting and organising such data.

Content analysis is usually performed directly on existing material by using a sampling procedure that extracts the main themes from the mass of existing information on a subject. Existing data analysis literally focuses on data that already exist in a processed form, whereas content analysis creates data from existing formal sources, mostly archival material. Both content analysis and existing data analysis can thus be viewed as secondary analysis. The original data should be of relatively recent origin in order to be useful for further analysis. Secondary analysis should offer a new explanation or perspective on the first investigation. The researcher should take care not to modify the contents of the original material in any way or simply repeat it mechanically.

3.2 The process of secondary analysis

As in the case of most process models, different steps in the process of secondary analysis are suggested by Grinnell (2001: 335–342).

3.2.1 Problem formulation

When planning a project, most prospective researchers automatically consider collecting new data, and very few consider the re-analysis of existing datasets from the beginning. If researchers do wish to do secondary analysis as a first choice, the problem formulation should be performed before they acquaint themselves with a particular dataset. This would prevent them from formulating a problem merely in order to use a particular set of existing data. An existing dataset may never be used merely because it exists, or is convenient or inexpensive. The problem formulation is thus the researcher's broad conceptualisation of the problem that should be refined in due course. Only now should access to potentially important documents and records be negotiated (Patton 2002: 293).

3.2.2 Formulating research questions

Formulating research questions is the next step of the process. Vague thoughts must now be formulated as specific questions about the subject. All questions should be related to the goals, objectives and hypotheses of the investigation. As soon as the questions have been formulated, the researcher should decide on the nature and scope of the investigation. He or she can decide, for example, on an abbreviated report, an extended report, a report that focuses only on a subtheme of the main theme, an analysis of a conceptual framework such as a theory, or a re-analysis of the original dataset, utilising more sophisticated analytical techniques.

3.2.3 The pilot study

This phase of the process should be performed in exactly the same manner as in any research procedure; that is, all aspects of the pilot study should be considered. Researchers should acquaint themselves with all available literature on the subject.

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Discussions or other forms of contact with experts are crucially important in order to establish whether the study envisaged has merit. Researchers should also study the selected database to ascertain whether it is correct and where voids in the data occur. In the event that access to the findings is wholly or partially limited, they must obtain written permission beforehand from the owner or organisation. Researchers should also make the investment of time, money and energy necessary to establish whether the relevant dataset is suitable for their purpose.

3.2.4 Reprocessing the data

Researchers should remember that the actual collection of data is not relevant to their research, since the data are already available and were the responsibility of another researcher (Stewart 1984: 12). The fact that researchers had no or very little control over the original data collection does not relieve them of the responsibility of verifying the validity and reliability of the data. When a suitable dataset has been located the researcher should ensure it is linked to the research goals and questions of the present project. The researcher should also identify the variables to be investigated. The gist of the research – that is, the reprocessing of the existing data – is done at this point.

In many cases not all data of the first study are useful or necessary, and therefore the reduction of data has a place in secondary analysis. All information being considered for secondary analysis should be viewed critically. As part of being critical, questions such as what the purpose of the original study was, who was responsible for the data collection and if the data are still relevant at the present time should be asked.

3.2.5 Analysis and interpretation of the data

When the reprocessing of the data is completed, the validity and reliability of the material should be established in order to respond as objectively as possible to the research questions formulated at the beginning of the present analysis. The collected data can also be compared with the findings of other researchers, or with the original study. Relationships can be identified, or further hypotheses developed.

3.2.6 Report writing

As in the case of any other research procedure, the findings of a secondary analysis should also be recorded. Without a proper scientific report on the project, even the best investigation has very little merit, since transferability and verifiability can only be evaluated in terms of the research report.

As was mentioned in the first chapter, physical manifestations or deposits are used as data sources in some sciences such as archaeology and palaeontology, but relatively infrequently in a discipline such as social work. However, the number of cigarettes that a client smokes during an interview, for example, may indicate the degree of stress he or she has endured. Again, the furniture in the house of a client may be studied with a view to gauging the values of the client. For instance, is the house expensively furnished while the client can hardly afford basic provisions?

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SECTION D

3.3 Advantages of secondary analysis

The advantages of secondary analysis may be indicated as follows:

- *Avoids data collection.* The need to collect data is avoided in secondary analysis and the researcher saves on costs, time and inputs (Neuman 2003: 320; Royse 2004: 213; Rubin & Babbie 2005: 279).
- *Maximises inputs.* If the purpose of the investigation is reconcilable with existing data, researchers can maximise their inputs by concentrating on the latter (Grinnell 2001: 342).
- *Verifies data.* Secondary analysis can be complementary to, or contrasted with, other research in order to confirm or reject previous findings and to identify trends (Ritchie & Lewis 2003: 61). The accuracy of the data can also be verified with secondary analysis (Royse 2004: 212), although replication of the initial study is not the intention of secondary analysis.
- *Avoids reactivity.* Reactivity – that is, unnatural reactions in the behaviour of respondents to the fact that they are being observed – is avoided in secondary analysis.
- *Is an independent procedure.* Secondary analysis is an independent procedure, and a total investigation can be undertaken using this procedure. The study can be undertaken on an exploratory, descriptive as well as an explanatory level (Alston & Bowles 2003: 187).
- *Avoids harmful effects on respondents.* Direct harmful effects on respondents are avoided in secondary analysis, and ethical dilemmas are therefore minimised (Royse 1995: 209).
- *Can be used for both paradigms.* Both quantitative and qualitative data can be used for secondary analysis.
- *Is multidisciplinary.* The same dataset can be analysed by different disciplines and viewed from different perspectives in order to obtain a multidisciplinary understanding of social issues.
- *Utilises extended datasets.* Secondary analysis is suitable in cases where a dataset is available that is larger and more comprehensive than that which the researcher could have handled on his or her own.
- *Develops a sound scientific attitude.* Researchers using secondary analysis normally develop a sound scientific scepticism with regard to data collected by others. Researchers undertaking secondary analysis comes to know the dataset so well that they can detect errors and prejudices in the original report (Royse 2004: 213).
- *Is retrospective*. This procedure enables the researcher to study past events and issues in retrospect (Sarantakos 2000: 277).

3.4 Disadvantages of secondary analysis

The problem areas which may lead to disadvantages in secondary analysis may be summarised as follows:

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- *Complexity*. This method may initially appear simple. However, the researcher might discover that much more time and effort are necessary than he or she originally planned for. It all depends on the nature and purposes of the particular project.
- *Reflection of human behaviour.* Written sources cannot accurately and authentically reflect certain aspects of human behaviour, such as feelings, attitudes and non-verbal communication (Bailey 1987: 293–294). Certain data may simply not be available, or they may even contain errors that the secondary researcher is unable to detect.
- *Obtaining of sources.* Some of the most important sources are often impossible to trace or may even have been destroyed (Alston & Bowles 2003: 189). The information is sometimes also available in a form that is not suitable or is inappropriate for the researcher's purposes (Neuman 2003: 322).
- *Representativeness.* Documents are not necessarily representative of their kind and do not allow generalisations (Sarantakos 2000: 277).
- *Prejudices in documents.* All existing documents should be evaluated in terms of their potential prejudices. May (1993: 149–150) states in this regard: "Thus, what people decide to record, to leave in or take out, is itself informed by decisions which relate to the social, political and economic environment of which they are a part."
- *Validity and reliability.* These create a problem with the selection of material for secondary analysis, since such selection is dependent upon the discretion and perspective of the researcher. Many researchers tend to assume that data gathered by others are necessarily correct, which may not always be the case (Williams, Tutty & Grinnell 1995: 270). The researcher is not always aware of the degree of accuracy observed in the first investigation (Babbie 2007: 280; Rubin & Babbie 2001: 384; Yegidis & Weinbach 1996: 162–163). The reliability of the data collected can be determined by examining the internal consistency and test–retest reliability. The validity of the data can be determined by ascertaining whether the data have been collected and reported with care and precision (Struwig & Stead 2001: 80–81).
- *Homogeneous stimulus.* A homogeneous stimulus occurring throughout different documents, for instance linking divorce with alcoholism regardless of the circumstances, can become a problem in secondary analysis. The records may thus be unreliable because people may record what they think should be recorded, not necessarily the truth (Alston & Bowles 2003: 189). When undertaking secondary analysis of records of clients at a welfare agency, researchers have often found that not all files contain the relevant information. Often, certain categories of information simply have to be left out.
- *Definitions.* A considerable degree of difference of opinion on the definition of available data can be viewed as a disadvantage of secondary analysis. In the same manner, two researchers can differ in their definition of key concepts, which can also cause problems of interpretation.

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- *Confidentiality and anonymity.* The fact that a second researcher or group of researchers is working with the particular database could possibly affect confidentiality and anonymity.
- *Inadequate understanding of the problem.* Since researchers concern themselves merely with the records or files of a previous researcher, or even with material that was not collected with a view to research, they can only obtain a partial understanding of the problem. The value of personal contact with the original researcher, whenever possible, cannot be overstressed.
- *Professional jealousy.* Researchers are sometimes reluctant to make their data available for fear that the second researcher could become more famous than they are, or that methodological and statistical errors in the report could be identified.
- *Copyright.* The ownership of the original data is a complex issue and could cause many copyright regulations to be invoked.
- *Limitation to using available data.* By definition, the researcher can only use that which is available. Data may thus be inconsistent because of problems with the original recording (Alston & Bowles 2003: 189).
- *The time factor.* Owing to the duration of longitudinal studies, few researchers take on this kind of research, and researchers and students have very few examples available.
- *Paucity of really suitable databases.* Researchers may use secondary data that are inappropriate for their research question (Neuman 2003: 322). The process of locating a suitable and relevant database may be time consuming and complicated. The data already collected may have to be re-conceptualised and manipulated in order to delineate the problem specifically and define it in workable terms.
- *Difficulty of obtaining sources.* Some of the most important sources are often impossible to trace or have been destroyed (Royse 2004: 213). The information is sometimes also available in a form that is not suitable or standardised for the researcher's purposes (Grinnell 2001: 344). Some data are never published or made available for dissemination.

It is obvious that no databases exist that meet all requirements and, therefore, undertaking secondary analyses always implies compromises. The researcher must know that a price has to be paid for the advantage of having ready-made data by having to forfeit certain important aspects. One must always be aware that the data one is using for secondary analysis was conducted for another purpose and that this purpose might undermine the study's validity (Alston & Bowles 2003: 188).

SUMMARY

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The use of document study enables the qualitative researcher to investigate people, events and systems in depth by analysing authentic written material. For this purpose a variety of sources can be used, such as personal and official documents, mass

media and archival material. It is, however, imperative that the validity and reliability of all documents be tested continuously, and that the advantages and disadvantages of a particular study are assessed.

With regard to secondary analysis, the researcher should bear in mind that datasets on the subject may exist that could be used by the second researcher with the necessary adaptations. Such datasets should be examined carefully for possible utilisation before new data are collected. If an available dataset meets the requirements of the second researcher, he or she can confidently undertake secondary analysis as a research procedure. However, researchers should always first establish for what purpose the original data were collected before using them for their own purposes.

Data may never be viewed as suitable and practicable merely because they are available. The researcher must always scrutinise the dataset objectively and assess the advantages and disadvantages thoroughly before using the particular set. Compromises will always have to be made between the advantages and disadvantages of the available dataset on the one hand and the implications of collecting so-called new data on the other.

It is our contention that the main difference between document study and secondary analysis can be traced to the fact that, in document study, a variety of documents must be further analysed, generally documents such as personal documents, official documents or mass media that were not intended for any research purposes. On the other hand, secondary analysis can be seen as analysing documents that were based on previously done research. As a prerequisite to secondary analysis, the existing report on the primary study must be available to the secondary analyst.

Self-evaluation and group discussion

You have selected *document study* as the main data-collection method for the qualitative study you intend to undertake. Explain the following:

- The nature of the study you are undertaking
- Why you decided on the particular research problem
- How the study of documents will be applied in your specific study

You have selected *secondary analysis* as the main data collection method for the qualitative study you intend to undertake. Explain the following:

- The nature of the study you are undertaking
- Why you decided on the particular research problem
- How secondary analysis will be applied in your specific study

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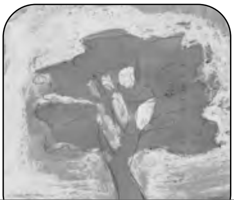

23

H STRYDOM & CSL DELPORT

Sampling and pilot study in qualitative research

Learning objectives

Studying this chapter should enable the reader to

- distinguish between sampling in the quantitative and sampling in the qualitative paradigms
- revise the types of non-probability sampling technique used in qualitative research
- view the pilot study as an aspect of qualitative research.

1. INTRODUCTION

The notion behind sampling theory is that a small set of observations can give an idea of what can be expected in the total population of the intended study (Royse 2004: 189–190). The qualitative and quantitative research processes have many similarities with regard to sampling and the pilot study. However, there are differences, and this chapter will attempt to highlight these without repeating material from previous chapters. In order to gain a complete understanding of sampling and the pilot study, readers are advised to read this chapter together with chapters 14 and 15.

2. SAMPLING

2.1 Sampling differences between the two paradigms

Sampling is also utilised in qualitative research, though it is less structured, less quantitative and less strictly applied than in the case of quantitative research (De Vaus 2002: 240; Sarantakos 2000: 154). The reason for this can be linked to a considerable degree to the methods of qualitative data collection; that is, observation

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and interviewing. Observation, for instance, is applied as widely as possible in order to collect the richest possible data, but this in fact often implies an unstructured element. As Rubin and Babbie (2001: 399) rightly state: "Field researchers attempt to observe everything within their field of study; thus in a sense they do not sample at all." In interviewing, where the emphasis is placed on collecting individual, detailed, in-depth information, the qualitative rather than the quantitative element of the information is important.

Patton (2002: 244) says that there are no rules for sample size in qualitative inquiry. Sample size depends on what we want to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility, and what can be done with the available time and resources. In qualitative research, sampling occurs subsequent to establishing the circumstances of the study clearly and directively. Thus the sampling is undertaken after the actual investigation has commenced. Using the logic of replication tells us something, but repeated replications give us more confidence in findings. Where we find instances that do not fit with our expectations, this may produce the need to conduct additional studies to enable us to follow up hypotheses that the "deviant" case throws up (De Vaus 2002: 240). Sarantakos (2000: 156) describes sampling in qualitative research as being relatively limited, based on saturation, not representative, the size not statistically determined, and involving low cost and less time. It can thus be inferred that in qualitative investigations non-probability sampling is used almost without exception.

2.2 Types of non-probability sampling technique in qualitative research

In non-probability sampling the odds of selecting a particular individual are not known because the researcher does not know the population size or the members of the population (Gravetter & Forzano 2003: 118; Salkind 2000: 87). Unrau, Gabor and Grinnell (2007: 280) add that in the non-probability paradigm each unit in a sampling frame does not have an equal chance of being selected for a particular study. Denzin and Lincoln (2000: 370) point out that qualitative researchers seek out individuals, groups and settings where the specific processes being studied are most likely to occur. A process of constant comparison between the individuals and groups being studied is essential, since the researcher is in pursuit of understanding all aspects of his or her research topic.

In qualitative research, data are often derived from one or two cases. It is thus most unlikely that these cases are selected randomly. Silverman (2000: 102) adds that a particular case may be chosen simply because it allows access. Qualitative researchers also adopt the stance that no individual or group is ever only an individual or group. Each case must be studied against the background of more universal social experiences and processes. Denzin and Lincoln (2000: 370) put it as follows: "Thus to study the particular is to study the general." According to these authors, any case will have attributes of the universal. The reader should, therefore, be able to generalise subjectively from the case being studied according to his or her own experiences.

The overall purpose of the use of the relevant sampling techniques in qualitative research is to collect the richest data. Rich data mean, ideally, a wide and diverse

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range of information collected over a relatively prolonged period of time. The various types of non-probability sampling technique in qualitative research are discussed in the section that follows.

2.2.1 Purposive sampling

In purposive sampling a particular case is chosen because it illustrates some feature or process that is of interest for a particular study – though this does not simply imply any case we happen to choose (Silverman 2000: 104). Marlow (2005: 144) refers to this kind of sampling as typical case sampling in qualitative research where typical cases are sought and selected for the study. Purposive sampling is also seen by some as judgemental sampling (Rubin & Babbie 2005: 247). This type of sample is based entirely on the judgement of the researcher, in that a sample is composed of elements that contain the most characteristic, representative or typical attributes of the population that serve the purpose of the study best (Grinnell & Unrau 2008: 153, Monette, Sullivan & DeJong 2005: 148).

In purposive sampling the researcher must first think critically about the parameters of the population and then choose the sample case accordingly. Clear identification and formulation of pre-selected criteria for the selection of respondents is, therefore, of cardinal importance (Maree 2007: 79). Creswell (2007: 125) adds that this form of sampling is used in qualitative research and that participants and sites are selected that can purposefully inform an understanding of the research problem of the study. The search for data must be guided by processes that will provide rich detail to maximise the range of specific information that can be obtained from and about that context (Erlandson et al. 1993: 33). In the case of purposive sampling researchers purposely seek typical and divergent data.

2.2.2 Theoretical sampling

Often sampling in qualitative research is controlled by the need for developing theoretical argument, which can be referred to as theoretical sampling (Alston & Bowles 2003: 81). The sample is thus chosen to assist the researcher to understand the situation under study and to highlight the researcher's emerging theory (Neuman 2003: 215). As qualitative researchers progress in refining the various categories of their research, they may notice voids in their data. In such an event theoretical sampling can be used, in which only specific matters are studied in order to obtain more precise information that would cast further light on the developing theory, thus making it definitive and useful. This form of sampling seeks to refine ideas and not to enlarge the original sample. In such a case researchers could avail themselves of people, scenery, events or documents. They could also return to the same persons or situations for more information.

Theoretical sampling helps us to define our categories, to identify the contexts in which they are relevant, to specify the conditions under which they come up or are maintained, and to discover their consequences (Denzin & Lincoln 2000: 519). In the case of theoretical sampling, an increasing interest in the emerging theory guides the selection of sampling cases (Neuman 2000: 200). But at some point during the data-gathering phase, the researcher will no longer find any new categories of data, or any new inputs into existing categories of data and can now proceed with

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the following subject (Bryman 2000: 117). At this point, one may speak of theoretical saturation – a great enhancer of external reliability (Babbie & Mouton 2001: 288).

2.2.3 Deviant case sampling

Deviant case sampling, also called extreme case sampling, is used when the researcher selects cases that differ from the dominant pattern or characteristics of other cases where the range of experience of a particular social phenomenon are already known (Morris 2006: 91). Neuman (2003: 215) states that the goal of deviant case sampling is to locate a collection of special, unusual, different or peculiar cases that are not representative of the whole. These cases are selected because they are unusual, enlightening or troublesome, and the researcher hopes to learn more about the phenomenon by studying cases that fall outside the general pattern (Erlandson et al. 1993: 83). By utilising deviant case sampling, the researcher can learn from highly unusual manifestations of the particular phenomenon of interest. Focusing on the negative or problematic case/group is especially important in qualitative research.

2.2.4 Sequential sampling

Sequential sampling gathers cases and data until the amount of new information or the diversity of cases is completed, in other words until saturation point is reached. This requires the researcher to continuously evaluate all the collected data in order to know when this occurs (Neuman 2003: 215). Sequential sampling is similar to purposive sampling except that in purposive sampling the researcher tries to find as many relevant cases as possible until all the resources are exhausted (Neuman 2003: 215). Sequential sampling can also be compared to snowball sampling in the sense that in the case of snowball sampling the topic of research is more hidden and the participants are therefore very hard to get hold of, which is not necessarily the case with sequential sampling.

2.2.5 Snowball sampling

Snowball sampling is normally used when there is no knowledge of the sampling frame and limited access to appropriate participants for the intended study (Alston & Bowles 2003: 90). Snowball sampling has particular application value in qualitative research, since it is directed at the identification of hard-to-reach individuals. Snowballing involves approaching a single case that is involved in the phenomenon to be investigated. Information is then sought from this person that enables him or her to locate other members of that population – hence the term *snowball sampling* (Babbie 2007: 184–185).

This one person refers the researcher to another similar case or preferably more than one (Grinnell & Unrau 2008: 153, Royse 2004: 197–198). In this manner the sampling frame is selected consisting of people who could make up the sample until a sufficient number of cases have been included in the study. The researcher should carry on selecting participants until no one else with those specific characteristics can be found or until data saturation has taken place (Alston & Bowles 2003: 90; Sarantakos 2000: 153).

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SECTION D

Because it can easily happen that the chain becomes broken, the researcher should preferably ask each respondent to give, for instance, five names instead of only one. The snowball technique is excellent in those cases where the researcher is investigating a relatively unknown phenomenon such as the psychosocial circumstances of Polish immigrants in Johannesburg or the degree of life satisfaction of street people in Cape Town.

2.2.6 Key informant sampling

In this case, sampling relies on people in the community identified as experts in the particular field of interest (Marlow 2005: 145). The strategy is to interview these identified experts systematically after they have been identified. The issue of non-probability comes into the picture because there cannot be certainty whether the identified participants actually are the total spectrum of possible participants.

2.2.7 Volunteer sampling

Volunteer sampling can also be used in qualitative research. However, volunteers may not necessarily be used merely because nobody comes forward or because the persons who do volunteer may not be suitable. Silverman (2000: 159) states that volunteer sampling works well when the respondents are known to one another or are at least aware of one another and can encourage one another to become involved in the study. This category of volunteers may, however, have a specific opinion about the issue being studied, and may impress their views upon all concerned.

Persons who come forward voluntarily may, of course, facilitate the task of the researcher and accelerate the process. Mark (1996: 138), however, warns that the researcher must bear in mind that those who join the project of their own volition are normally more motivated, better trained and better skilled, and possess more specific psychosocial characteristics than those who do not apply voluntarily. The researcher should, therefore, check the motives of the volunteers with regard to the objectives of the survey in question, thus guarding against possible hidden agendas.

The overall purpose of the use of the relevant sampling techniques in qualitative research is to collect the richest data. Lofland and Lofland (1995 quoted by Rubin & Babbie 2001: 403) state: "Your overall goal is to collect the richest possible data. Rich data mean, ideally, a wide and diverse range of information collected over a relatively prolonged period of time."

3. PHASE 4: IMPLEMENTATION

3.1 Pilot study

3.1.1 The importance of a pilot study in qualitative research

It is important to conduct a pilot study whether it is a qualitative or a quantitative study that is undertaken. In qualitative research the pilot study is usually informal, and a few respondents possessing the same characteristics as those of the main investigation can be involved in the study, merely to ascertain certain trends. The purpose is to determine whether the relevant data can be obtained from the

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respondents (Royse 1995: 172). A statistically correct pilot study does not play as important a role in qualitative as in quantitative research.

Janesick (in Denzin & Lincoln 1994: 213) states that the pilot study in qualitative research allows the researcher to focus on specific areas that may have been unclear previously or to test certain questions. By testing the nature of questions in an interviewing schedule or for focus groups in the pilot study, the qualitative researcher is able to make modifications with a view to quality interviewing during the main investigation. A pilot study also contributes to the establishment of relationships with the respondents or with the community, and to obtaining permission for the project (Monette et al. 1998: 93). Effective communication patterns can also be established in this manner. The pilot study assists, moreover, in estimating the time and costs that may be involved, as well as in pre-empting the problems that may arise during the actual qualitative interviews (Janesick in Denzin & Lincoln 1994: 213).

3.1.2 The aspects of a pilot study

All four aspects of a pilot study as discussed in Chapter 15 – that is, the literature review, the experience of experts, the feasibility of the study, and testing the information-collection instrument – should also be used in qualitative research.

3.1.3 Reviewing the literature

The researcher should decide on the place and role of a literature review in a qualitative study, as discussed in Chapter 18.

3.1.4 Discussions with experts

Interviewing experts is important in qualitative research for the purpose of identifying themes for further investigation or in order to do a valid literature review with a view to verifying findings.

3.1.5 Feasibility of the study

Since qualitative research is usually conducted in a smaller area with fewer respondents, but in greater depth and over a longer period of time than in quantitative research, it is of prime importance to undertake as comprehensive and accurate an assessment as possible of the real situation to be investigated. During this phase of the pilot study the researcher may already form an opinion on the openness of the community or group of respondents, their willingness to cooperate, and the number of respondents likely to be involved until data saturation is achieved.

3.1.6 Testing the measuring instrument

This aspect of a pilot study is often difficult to perform in a qualitative investigation, yet it is very important. In the event of the main investigation involving the study of only a few cases over a long period of time, it would be cumbersome to conduct a pilot study in exactly the same manner, since this would be tantamount to repeating the main investigation. The testing of the measuring instrument should rather be avoided in such cases, or undertaken in some other way, such as by con-

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SECTION
D

ducting a few relevant interviews, making a few relevant observations or reviewing a few documents.

SUMMARY

In this chapter the specific qualitative aspects of sampling and pilot testing are highlighted. Most of the other issues concerning sampling and pilot testing outlined in the chapters dealing with quantitative research in Section C apply almost verbatim to qualitative research.

Self-evaluation and group discussion

- The most assertive member of your study group has complained that there are discrepancies between Chapter 14 (on sampling) and this chapter. Describe how you would lead a group discussion on this issue. State the study group's final decision in this regard.
- Gaining in self-confidence, another group member subsequently declares that a pilot study does not play a role in the qualitative paradigm. The group members are divided on the issue. Summarise the arguments of both sides and formulate the group's final recommendation.

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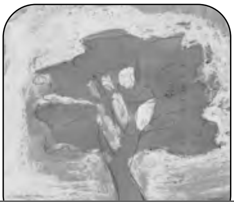

24

W SCHURINK, CB FOUCHÉ & AS DE VOS

Qualitative data analysis and interpretation

Learning objectives

Studying this chapter should enable the reader to

- understand the nature of qualitative data analysis
- gain an insight into the process of data analysis and the application of this process
- understand the criteria for assessing the soundness of qualitative data.

1. INTRODUCTION

As we have seen in the preceding chapters, qualitative research covers a spectrum of techniques, the centrepiece of which is formed by observation, interviewing and documentary analysis. As in the quantitative arena, the purpose of conducting a qualitative study is to produce findings; as Patton (2002: 432) states, qualitative analysis *transforms* data into findings. This involves reducing the volume of raw information, sifting significance from trivia, identifying significant patterns and constructing a framework for communicating the essence of what the data reveal. Data analysis is the process of bringing order, structure and meaning to the mass of collected data. "Broadly conceived this is the activity of making sense of, interpreting and theorizing data" (Schwandt 2007: 6).

While extraordinary attention has been given to qualitative research and its associated terms over the past few decades by scholars from a wide variety of social science disciplines, many would-be qualitative researchers interested in undertaking qualitative research still steer clear of it. This is partly due to the perception that the analysing and interpretative activities associated with this research are seen to be "onerous" and "demanding" by emerging researchers, while seasoned

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researchers regard the same activities as creative and fulfilling. In reality, qualitative data analysis is messy, ambiguous and time consuming, but it is also a creative and fascinating process. It does not proceed in a linear fashion; it is not tidy. The mere amount of data generated by qualitative research, in the form of hundreds of pages of field notes (some running into the thousands) or mountains of dictation on tape, is even more awe inspiring to the inexperienced qualitative researcher than the quantitative researcher.

Qualitative research is in a constant state of flux. It is clear that as scholars strive to make sense of the social world and create new knowledge or revisit what they know, they use approaches spanning various disciplines in the social sciences, and increasingly also use approaches and practices of the humanities. Shank (2006: 218) captures this well:

> One thing is for sure – qualitative research will continue to change. Qualitative research has been in motion ever since it first started coming together as a cohesive movement, and there is no reason to suppose that it will not continue to grow and develop.

In *The SAGE handbook of qualitative research* (2005), Denzin (regarded by many scholars as the most prominent scholar associated with qualitative research) and Lincoln (2005: xv) write: *"There is no one way to do interpretive, qualitative inquiry.* We are all interpretive bricoleus stuck in the present working against the past as we move into a politically charged and challenging future" [emphasis added]. Bryman (2007: xiv) adds in a similar vein:

> It is a very exciting time to conduct and comment on qualitative research but it is also unsettling at times, as many old convictions are re-evaluated and possibly discarded. However, the openness of qualitative researchers to new ways of thinking is very impressive and it is very clear that there is a great deal more to come.

From the preceding brief discussion it is understandable why would-be qualitative researchers are hesitant to embark on qualitative inquiry. While this is neither the time nor the place to explicate the possible reasons, the following remarks by Bogdan and Biklen (2007: 159) summarise this state of affairs very well:

> The analytic task, coming up with findings and interpreting and making sense out of the collected materials, appears monumental when one is involved in a first research project. For those who have never undertaken it, analysis looms large, something one can avoid, at first glance, by remaining in the field collecting data when that period should have ended. Anxiety mounts: "I didn't get anything good." "I've wasted my time." "This job is impossible." "My career will end with this mess of unanalyzed fieldnotes in my computer." These fears have crossed the minds of most of us the first time we faced analysis and interpretation. While it is complicated, it is also a process that can be broken down into stages. Confronted as a series of decisions and undertakings rather than as one vast interpretive effort, data analysis becomes a more manageable process.

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2. THE NATURE OF QUALITATIVE DATA ANALYSIS

It should be obvious by now that within a multidisciplinary and ever-evolving field such as qualitative inquiry, formalising definitions is highly problematic and, many would argue, impossible. This most definitely applies to developing a generally accepted definition of qualitative data analysis. Nevertheless, for our purposes it is useful to have some understanding of both qualitative data and qualitative data analysis of which the following serve as good working definitions:

> Qualitative analysis is the " ... nonnumerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships" (Babbie 2007: 378).
>
> The idea of analysis implies some kind of transformation. You start with some (often voluminous) collection of qualitative data and then process it, through analytic procedures, into a clear, understandable, insightful, trustworthy and even original analysis (Gibbs 2007: 1).

Bogdan and Biklen (1998: 106) provide the following important views on qualitative data:

> The term data refers to the rough materials researchers collect from the world they are studying; they are the particulars that form the basis of analysis. Data include materials the people doing the study actively record, such as interview transcripts and participant observation fieldnotes. Data include what others have created and the researcher finds, such as diaries, photographs, official documents, and newspaper articles. Data are both the evidence and the clues. Gathered carefully, they serve as the stubborn facts that save the writing you will do from unfounded speculation. Data ground you to the empirical world and, systematically and rigorously collected, link qualitative research to other forms of science. Data involve the particulars you need to think soundly and deeply about the aspects of life you will explore.

Qualitative data analysis is, first and foremost, a process of inductive reasoning, thinking, and theorising which certainly is far removed from structured, mechanical and technical procedures to make inferences from empirical data of social life. Data analysis could be treated both as science and as art. When the emphasis is on science the analysis should be rigorous, disciplined, systematic and methodically documented as in the case of grounded theory, typological analysis and analytic induction. When data analysis is treated more like an art it does not mean that it is a less empirical procedure. But it also allows for an ambiguous, creative and fascinating process. A variety of analytic strategies are used that involve interpreting the data by sorting, organising and reducing them to more manageable pieces and then exploring ways to reassemble them (Schwandt 2007: 7).

Kreuger and Neuman (2006: 434) offer a useful outline of the differences and similarities between qualitative and quantitative analysis. According to these authors, qualitative and quantitative analysis are similar in four ways. Both forms of data involve

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- inference – the use of reasoning to reach a conclusion based on evidence
- a public method or process – revealing their study design in some way
- comparison as a central process – identification of patterns or aspects that are alike and unalike
- a striving to avoid errors, false conclusions and misleading inferences.

The core differences between qualitative and quantitative analysis are as follows (Kreuger & Neuman 2006: 434–435):

- Quantitative researchers choose from a specialised, standard set of data analysis techniques, while qualitative data analysis is less standardised with the wide variety in approaches to qualitative research matched by the many approaches to data analysis.
- The results of qualitative data analysis guide subsequent data collection, and analysis is thus a less-distinct final stage of the research process than is quantitative analysis where data analysis does not begin until all data have been collected and condensed into numbers.
- Qualitative researchers create new concepts and theory by blending together empirical evidence and abstract concepts, while quantitative researchers manipulate numbers in order to test an hypothesis with variable constructs.
- Quantitative researchers use the language of statistical relationships in analysis, but qualitative data are in the form of words, which are relatively imprecise, diffuse and context based.

The following aspects are particularly important in considering the nature of qualitative data analysis:

Firstly, there are *multiple ways to undertake qualitative data analysis*. Indeed, there is

> ... no single right way to do qualitative data analysis – no single methodological framework. Much depends on the purpose of the research, and it is important that the method of analysis is integrated from the start with other parts of the research, rather than being an afterthought (Punch 1998: 199–200).

Secondly, there is always a *need for more information about how to conduct qualitative analysis.* A general cursory study of the qualitative research literature will reveal that qualitative data analysis has received quite a lot of attention over the years, but as Bogdan and Biklen (2007: 159–160) aptly point out:

> ... one complaint by novices ... is that analysis and interpretation have never received enough attention. This may be because no matter how much it is discussed in the literature, people who have not had experience doing it will never feel they know how, and consistently ask for more.

Bailey (2007: 125) adds that " ... few concrete and easily understood instructions exist regarding how to gain analytical insight into the data one has collected. Indeed, some suggest that data analysis is more of an art than a technique".

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Thirdly, broadly speaking, qualitative data analysis entails *an ongoing process using open-ended data and tailoring the method of analysis as required.* As Creswell (2003: 190) states, qualitative analysis is " ... an ongoing process involving continual reflection about the data, asking analytic questions, and writing memos throughout the study". Open-ended data, for the most part, require asking questions and developing an analysis from the moment data collection starts, and tailoring the method used to analyse the data to specific types of qualitative research strategy or design, for example case study, ethnographic research, life histories, phenomenological research and narrative research.

Fourthly, closely related to the above, qualitative data analysis may be broadly conceptualised as *ranging from informal to formal strategies.* There are informal and individualised ways by which researchers order, sort, systematise and make sense of the materials they collect, and more formal strategies which were developed over the years and include specific procedures related to a chosen qualitative design or strategy. Two strategies related to the latter that have increasingly come to the fore during the so-called *modernist moment* of qualitative research (Denzin & Lincoln 1994, 2005) are *analytic(al) induction* (AI), and *grounded theory* (GT). Arguably the single most important text informing the development of the formal strategies, is *Boys in white* by Becker et al. (1961). As Denzin and Lincoln (2005) point out, this monumental piece of research which was well established in mid-20th century methodological discourse, strived to make qualitative research as rigorous as quantitative research. Causal narratives were central to this research, which combined open-ended and quasi-structured interviews with participant observation and the careful analysis of the collected materials in uniform, numerical form. In short, work in this historical moment was clothed in the language and rhetoric of positivist and postpositivist discussion. Small wonder that the modernist moment is described as the golden age of rigorous qualitative analysis reflected on the one hand in *Boys in white* (Becker et al. 1961) and in *The discovery of grounded theory* (Glaser & Strauss 1967) on the other.

Lastly, researchers are increasingly expected to *consider the place of computers in qualitative data analysis*. One of the most important innovations in recent years that facilitates the ordering and categorising of qualitative materials has been computer-assisted qualitative data analysis software by means of which researchers can creatively manage and make sense of their data. "Computer-assisted qualitative data analysis software [popularly referred to as CAQDAS – a term coined by Lee and Fielding 2004] has been a growth area in terms of both the proliferation of programs that perform such analysis and the numbers of people using them" (Bryman & Bell 2004: 418). Some authors (refer to Flick 2006) provide a comprehensive and useful discussion on the use of computers in qualitative data analysis and of the history and current status of software and qualitative research. Many programs allow the researcher to specify relationships among codes and use them in analysis or even to write memos and link them to text and codes. And there is a variety of approaches to linking categorical and quantitative data (e.g. demographics, test scores, quantitative ratings) to text and for exploring categorical and quantitative data (e.g. word frequencies or coding summaries) to quantitative analysis programs for statistical analysis. Monette, Sullivan and DeJong (2008) warn that computer software does not do the researcher's work – it simply assists the researcher in doing many of the tasks related to data analysis.

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In this chapter we provide a practical approach to qualitative analysis by focusing on the handling and interpretation of the data as suggested by Gibbs (2007). We trust this will guide would-be qualitative researchers through at least the key decisions and steps required to analyse data qualitatively. In order to illustrate how one may interpret qualitative data from one particular formal strategy, we also briefly outline qualitative data analysis from a grounded theory approach.

3. PHASE 5: DATA ANALYSIS, INTERPRETATION AND PRESENTATION

As should be clear to the reader at this point in the book, data analysis, interpretation and presentation is the fifth phase in the research process. Step 12 of this process expects the researchers to process the data and analyse them according to the selected data analysis strategy (as discussed in Chapter 19). The results must be verified against the literature by embedding it in larger theoretical perspectives/paradigms (discussed in Chapter 18). Additional criteria for judging adequacy include considerations on sampling decisions made and data collection operations (as discussed in previous chapters). Information on how to ensure that findings are grounded in the data, that inferences are logical, and that strategies for increased credibility are used, will follow in this chapter.

The following useful general guidelines a researcher should keep in mind in the analysis of qualitative data will become clear through the discussion in this chapter (adapted from Rapley 2007):

- Reconsider your initial research question(s). Keep in mind that research questions in a qualitative study may change as the study progresses.
- Continue to use the research diary where all decisions and courses of action as well as analytical thoughts and critical reflections about the research were routinely written down right from the beginning of the research up to the end.
- Transcribe the text in sufficient detail. Depending on the research questions and design, sometimes a verbatim transcription of recordings is needed and sometimes summative notes of key aspects of conversations may suffice.
- Read and re-read the text, play and replay audio recordings or re-examine the non-textual data in order to become thoroughly familiar with it.
- Critically evaluate the meaning of the words used by the subject(s) or the visual material presented.
- First and foremost the researcher should be attentive to words and phrases in the participants' own vocabularies that capture the meaning of what they do or say. Allow for the discovery of any and all possible meanings.
- Identify the different topics or themes and code those encountered by means of a line-by-line analysis of each interview transcription. Remember that codes must be descriptive and characteristic of the data incident they present, rather than a mere naming or labelling. Do not worry if at first you have overlapping codes.
- Use the constant comparative method to develop a comprehensive coding scheme. This entails a continued naming of categories by adding additional tran-

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scribed interviews and by moving to the next step of comparing new data incidents with the conceptual categories already identified.

- As researchers identify different themes, they should look for underlying similarities between them. It is also important to note that qualitative researchers are, in the assessment of their materials, continually on the lookout for differences or deviations from the norm. If certain activities deviate from the pattern, this is evidence that there is indeed a pattern. Thus deliberately searching for cases that either confirm or disconfirm initially formulated themes serves to increase the credibility of research conclusions.
- In conclusion, the secret to data analysis is to analyse the data frequently according to the regularity and variability of the preliminary findings throughout the research process. Consider an array of plausible interpretations and avoid taking a hasty stance on possible theoretical conclusions. Test these preliminary findings during follow-up interviews.

We will now move to a more detailed discussion on the process of data analysis.

3.1 The process of qualitative data analysis

Patton (2002: 434) points out that qualitative researchers have an obligation to monitor and report the analytic procedures they use in their work. This means that they must observe their own processes, and analyse and report on the analytical process. The extent of such reporting will depend on the purpose of the study, whether its purpose is to conduct basic or applied research, to do a summative or formative evaluation, or undertake action research.

Creswell (2007: 150–155) believes that the process of data analysis and interpretation can best be represented by a spiral image – a data analysis spiral. The researcher moves in analytic circles rather than using a fixed linear approach. One enters with data made up of text or images (e.g. photographs and videotapes) and exits with an account or a narrative. In between, the researcher touches on several facets of analysis, circling around and "upwards" towards completion of the process.

As we know from discussions on process in a range of publications, there are always variations in the number and description of steps for the same process by different authors. For discussion purposes in this section, we integrate Creswell's (2007) analytic spiral with the process as described by Marshall and Rossman (1999: 152–159), comments in this regard offered by Gibbs (2007), and our experience of qualitative research. Key steps are presented in a linear form, bearing in mind, however, that these main activities also move in circles. Also important is to remember that steps such as these can never be followed rigidly like a recipe. They are meant as a guideline. Often some of these steps overlap, or are implemented in a different order to those steps offered by authors on qualitative data analysis.

PREPARING AND ORGANISING THE DATA

1. Planning for recording of data
2. Data collection and preliminary analyses

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3. Managing the data
4. Reading and writing memos

■ **REDUCING THE DATA**

5. Generating categories and coding the data
6. Testing the emergent understandings and searching for alternative explanations
7. Interpreting and developing typologies

■ **VISUALISING, REPRESENTING AND DISPLAYING THE DATA**

8. Presenting the data

3.1.1 Preparing and organising the data

1. PLANNING FOR RECORDING OF DATA

The researcher should plan for the recording of data in a systematic manner that is appropriate to the setting, research participants, or both, and that will facilitate analysis, before data collection commences (as stressed in earlier chapters). The researcher should demonstrate an awareness that techniques for recording observations, interactions and interviews should not intrude excessively on the ongoing flow of daily events. In some situations, even taking notes interferes with, inhibits or in some way acts on the setting and the participants. Plans to use audio recorders, video recorders, MP3 players, mini-discs, iPods, cameras and other mechanical devices should be considered carefully. Special attention needs to be paid to the consideration that data-recording strategies will be used that fit the setting and the research participants' sensitivities, and that these will only be used with their consent. The prevalence of electronic devices globally has ensured their familiarity for potential researchers and research participants, and has opened many new ways of recording data. Flick (2006) warns, though, that with easier recording options, researchers should take care to limit recordings to what is absolutely necessary for the research question.

In action and participatory research approaches, the researchers' intrusiveness in the setting is not an issue. Because these approaches are fundamentally interactive and include participants fully in framing questions and gathering data, the researcher's presence is considered an integral part of the setting. Whatever the qualitative approach, however, the researcher should practise and build habits for labelling audiotapes, carrying extra batteries for the recorder, and finding quiet places for taking notes. Such practices will pay off by keeping data intact, complete, organised and accessible.

In addition, the researcher should plan a system to ease retrieval for analysis. Planning ahead, for example, for the colour-coding of notes and descriptions of settings is invaluable for piecing together patterns, defining categories for data analysis and planning further data collection, and especially for writing the final product of the research. Flick (2006) suggests the use of templates such as documentation sheets for interviews.

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2. DATA COLLECTION AND PRELIMINARY ANALYSES: THE TWOFOLD APPROACH

As already implied, data analysis in qualitative inquiry necessitates a twofold approach. The first involves data analysis in the field during data collection while the second involves data analysis away from the field following a period of data collection. This second part, known as the office approach, may be conducted between visits to the field, prior to, as well as after, completion of data collection. Generally, the office approach focuses more on the pragmatics: "... the sorting, retrieving, indexing and handling of qualitative data" (Gibbs 2007: 1–2). This approach is designed to deal with the sheer amount of data that is created in qualitative research, in interview transcripts (Kvale 1996), field notes (Angrosino 2007) and through collected documents, photos, and video and audio recordings (Rapley 2007; Knowles & Cole 2008). CAQDAS (computer-assisted data analysis), as outlined above, has become popular in its focus on the latter approach to qualitative data analysis.

Some studies require researchers to collect all data before they engage in data analysis and interpretation (Bogdan & Biklen 2007). An example of this type of research includes the generation of an archive needed for discourse analysis (Rapley 2007); the approach to data analysis that involves interpretation and retelling as a process in an imaginative and speculative way. This is also true for some forms of phenomenology, biographical and narrative approaches, and more recent ethnographic methods such as auto-ethnography (Angrosino 2007). These approaches not only focus on analysing the subject matter but also emphasise the gathering and presentation of the data in such a way that "the subjects speak for themselves". Thus a detailed and authentic picture of the innermost experiences of the life world of the subject(s) is presented as the product of the research. However, while a quantitative study separates data collection from data analysis, a qualitative one generally involves an inseparable relationship between them.

An important assumption of the qualitative researcher is that the human instrument is capable of ongoing fine tuning in order to generate the most fertile array of data. One effect of this continuous adjustment process, Kreuger and Neuman (2006) argue, is that as data are gathered, they are analysed. Data analysis frequently necessitates revisions in data-collection procedures and strategies. These revisions yield new data that are then subjected to new analysis. The result of this process is the effective collection of rich data that generate alternative emerging themes or hypotheses, and provide the basis for shared constructions of reality. Data collection and analysis thus typically go hand in hand in order to build a coherent interpretation of the data. They mostly involve checking the data to see what is emerging from them and identifying hunches or ideas that need to be followed up, as well as actively questioning where the information already collected is leading the researcher (Grbich 2004).

Patton (2002: 436) poses the question: When does qualitative analysis actually begin? He points out that in quantitative research the lines between data collection and analysis are clear, but the fluid and emergent nature of qualitative inquiry makes the distinction between data gathering and analysis far less absolute. In the course of data collection, ideas about directions for analysis will occur. Patterns take shape. Possible themes spring to mind. Hunches emerge that inform subsequent data collection. Patton answers his own question as to the start of analysis by

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stating that ideas for making sense of the data that emerge while still in the field constitute the beginning of analysis; they are part of the recording of field notes.

Field notes are written accounts of what researchers hear, see, experience and think in the course of collecting and reflecting on the data they gather (Bogdan & Biklen 2007). Although the compilation of field notes may appear a straightforward matter, experienced researchers know that this is most definitely not the case. Such notes are not merely summaries of events but rather detailed reproductions of what took place. There is, of course, no way to record everything that occurred at a given point in time and place. Nevertheless it is of central importance that at least the following "Ws" be addressed: What happened? Who were involved? Where did the activities occur? What circumstances or issues impacted on the data? What are the major issues emerging? What issues need to be followed up? It also involves exploring the meaning of the data further by asking "So what" and "What if" questions. Compiling field notes is also very helpful for relating occurrences, for example words, expressions, interactions and social processes, to people, events and other occurrences, and the values and norms of particular groups of people. Discovering such linkages are important in selecting further theoretical incidents, persons and behaviours, and in establishing and verifying evolving ideas, themes and typologies. In addition to the descriptive material, Bogdan and Biklen (2007) provide the following list of materials that should, ideally, be included in reflective field notes:

- *Reflections on analysis* – that is, speculations about what researchers are learning, the themes that are emerging, patterns that may be present, connections between pieces of the data, and additional ideas and thoughts that may come to mind.
- *Reflections on method* – that is, information about methods employed in the study, comments on researchers' rapport with subjects as well as the ups and downs encountered in the study.
- *Reflections on ethical dilemmas and conflicts* – that is, concerns between researchers' own values and responsibilities to their subjects as well as their profession.
- *Reflections on the researcher's frame of mind* – that is, his or her assumptions about the subjects and the research setting.

Taylor and Bogdan (1998: 66) emphasise: "Since field notes provide the raw data of participant observation (qualitative research), you should strive to write the most complete and comprehensive field notes possible. This requires a tremendous amount of self-discipline, if not compulsiveness." Yet, this is often not done. Sadly, even seasoned qualitative researchers do not write field notes and leave it to memory and/or a recorder to capture the details of their data. Others tend to postpone note writing, and then, more often than not, never get around to doing it or simply hurry over it, resulting in notes that are sketchy and of little value.

Qualitative researchers new to writing field notes may express disbelief that comprehensive field notes such as often seen in published qualitative work could be produced from short periods of observation. In addition, some newcomers to qualitative research may feel that their memory, writing ability and/or energy will not meet the challenge posed by writing useful field notes. Bogdan and Biklen

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(1998: 108) give the following encouragement: "Take heart; do not quit before you give it a try. Some of you will only go out once and never complete a set of notes; for others, however, the discipline and skill that taking fieldnotes promote will be stimulating." It is advisable to type field notes into a computer. Not only will they be stored safely but also this does save time when one needs to mark, code, copy and move parts of field notes to various texts. It should be clear by now that compiling field notes already entails a step toward data analysis. Thus, writing detailed notes forces the researcher to think clearly about particular observations, what exactly happened, where things occurred, when events took place, and who the actor or actors were and how they experienced particular events. Discovering such linkages is important in selecting further theoretical incidents, persons and behaviours, and in establishing and verifying evolving ideas, themes and typologies.

Before concluding the discussion of this twofold approach to data collection and preliminary analyses, the following need to be noted:

- Too much focus on analysis while data collection is still in progress can interfere with the openness of qualitative inquiry – one of its strengths. Special care should therefore be taken not to rush into premature conclusions. On the other hand, repressing analytical insights may mean losing them forever, for there is no guarantee that they will return. Yet, the overlapping of data collection and analysis improves both the quality of the data and the analysis provided that initial interpretations do not overly confine analytical possibilities. Indeed, instead of focusing additional data collection entirely on confirming preliminary emerging themes or hypotheses, one should become particularly sensitive to looking for alternative explanations and patterns that would invalidate initial insights.

- Depending on one's views of the role of literature and theoretical concepts, one may take a preliminary review of relevant literature while gathering data. Bogdan and Biklen (2007: 169) suggest that going through the substantive literature in the area being studied will enhance analysis, but warn: "The danger in reading literature while you are conducting your study is that you may read and find concepts, ideas, or models that are so compelling they blind you to other ways of looking at your data." We have found that it is very helpful for researchers to read qualitative studies in unrelated fields, because it makes them familiar with how others have worked with their data and can provide models for their own work.

- Be attentive to indigenous words, expressions, analogies and metaphors used in the research settings or by research participants. While concrete concepts or slang words provide hunches of areas to focus on in subsequent data collection, analogies and metaphors are important to relate emerging themes of our research settings " ... to other settings or to the wide experiential array we carry with us" (Bogdan & Biklen 2007: 169).

- Keep a project diary. Such a history contains an account of the various steps taken in the process of conducting a study. More recently, this account is regarded as an *internal audit* which is applied to assess the quality or soundness of one's study. Flick (2006) encourages the use of a research diary especially where more than one researcher is involved in order to increase the comparability of the proceedings and make the research process more intersubjective and explicit.

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Once the data have been analysed and the writing of the dissertation or research report is underway, it is important to return to the research setting. On occasion, gaps or ambiguities found during analysis cry out for more data collection so, where possible, interviewees may be recontacted to clarify or deepen responses, or new observations may be made to enrich descriptions (Patton 2002: 437).

3. MANAGING THE DATA

This is the first step in data analysis away from the site, which is also often referred to as the intensive data analysis phase. As the first loop in the spiral, it begins the process proper. At an early stage in the analysis process, researchers organise their data into file folders, index cards or computer files. Besides organising files, researchers convert their files to appropriate text units, for example a word, a sentence, an entire story, for analysis either manually or by computer. If data have been recorded using technical media, transcription is a necessary step on the way to interpretation. It should not, however, dominate the research process with too much (sometimes unnecessary) exactness, according to Flick (2006: 293). He suggests it seems more reasonable to transcribe only as much as is required by the research question. This author also mentions that any data from qualitative online research, such as the answers, statements or narratives in e-mail interviews or electronic focus groups, eliminates the need for transcription.

Patton (2002: 440) aptly points out that the data generated by qualitative methods are voluminous. Organising and analysing a mountain of narrative can seem like an impossible task. However, he offers a few helpful guidelines. Getting organised for analysis begins with an inventory of what one has. Are the field notes complete? Are there any parts that were put off to be written later and need to be finished, even at this late date, before beginning analysis? Are there any glaring holes in the data that can still be filled by collecting additional data before the analysis begins? Are all the data properly labelled with a notation system that will make retrieval manageable (dates, places, interviewee identifying information, etc.)? Are interview transcriptions complete? One needs to get a sense of the whole. Esterberg (2002) states that managing data is a fairly mechanical process during which one gathers all the material one has collected, and devises some or other system to organise or file them. "You can't analyze data that you can't find. Whatever method you choose, be sure that you assemble all your data and can find what you need, when you need it" (Esterberg 2002: 156–157).

The transition between fieldwork and analysis discussed above is one point of transition between data collection and analysis, and transcribing interviews and notes. Doing all or some of one's own interview transcription provides an opportunity to get immersed in the data, an experience that usually generates emergent insights. Typing and organising handwritten field notes offers another opportunity to immerse oneself in the data in the transition between fieldwork and full analysis – a chance to get a feel of the cumulative data as a whole.

It is prudent to make backup copies of all one's data, Patton (2002: 441) further advises putting one master copy away somewhere secure for safekeeping. Indeed, if data collection has gone on over any long period, it is wise to make copies of the data as they are collected, being certain to put one copy in a safe place where it will for whatever reason not be disturbed, lost or burned. The data one has collected are

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unique and precious. Field notes and interviews should be treated as the valuable material they are. Protect them, Patton urges.

Once one copy is put away for safekeeping, Patton (2002: 442) likes to have one hard copy handy throughout the analysis, one copy for writing on, and one or more for cutting and pasting. A great deal of the work entailed in qualitative data analysis involves creative cutting and pasting of the data, even if this is done on a computer, as is now common, rather than manually. Under no circumstances should one yield to the temptation to begin cutting and pasting the master copy.

4. READING AND WRITING MEMOS

After the organisation and conversion of the data, researchers continue analysis by getting a feel for the entire database. It is generally expected that the researcher will read the transcripts in their entirety, often several times to get immersed in the details, trying to get a sense of the interview as a whole before breaking it into parts.

> As you review your materials, take notes if you find it helpful. But don't worry at this stage if it feels as if you will never be able to make sense of all your materials. Your main object is to try to load up your memory with all your data. You should think about it while you're driving and while you're eating and while you're running and whenever you have a spare moment (Esterberg 2002: 157).

Although he is referring to coding the data, Patton (2002: 446) quotes a participant response to an Internet question on software analysis that confirms the above:

> The best advice I ever received about coding was to read the data I collected over and over and over. The more I interacted with the data, the more patterns and categories began to "jump out" at me. I never even bothered to use the software program I installed on the computer because I found it much easier to code it by hand.

Writing memos in the margins of field notes or transcripts or under photographs helps in this initial process of exploring a database. These memos are short phrases, ideas or key concepts that researchers write to themselves about the coding process, called "analytic memos" by Kreuger and Neuman (2006: 440). The analytic memo forges a link between the data and more abstract thinking, and forms the basis for analysing data in the research report. These authors offer a range of suggestions for analytic memo writing, with the most pertinent being that it should start shortly after the beginning of data collection and continue until just before the final research report is completed. Several methods are outlined in the literature for "catching" the interesting events and processes, statements and proceedings related to both data collection and analysis in qualitative research. Flick (2006: 288) offers very helpful advice in taking a decision on how best to capture memos: " ... researchers should be led in their decisions by the following *rule of economy:* to record only as much as is definitely necessary for answering the research question." Refer also to the related discussion on field notes above.

Strauss and Corbin in Babbie (2007) distinguish three kinds of memo, namely

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code notes, theoretical notes and operational notes. The elements of these could be described as follows:

- *Code notes* identify the code labels and their meaning, that is, an account of what the researcher means by the codes used in the analysis.
- *Theoretical notes* are self-conscious, systematic attempts by the researcher to critically reflect on what took place, what he or she thought and experienced and also the reflections on the dimensions and deeper meanings of concepts. According to Richardson (2004), these are also called "personal notes" and include the researcher's critical reflection on his or her feelings about the research.
- *Operational notes* (also referred to as methodological notes) are detailed notes on circumstances relevant to understanding the data – what happened, and what was heard, seen and experienced. Little or no interpretation is provided in most instances. These notes may, however, include notes directing future data collection, such as reminders, instructions and critical comments to the recorder or researcher on how to collect the data, how to improve the quality of the interviews, whom to talk to next, etc.

3.1.2 Reducing the data

5. GENERATING CATEGORIES AND CODING THE DATA

In this loop of the spiral, category formation represents the heart of qualitative data analysis. It seems that this step in the analytic process demands a heightened awareness of the data, a focused attention to it, and an openness to the subtle, tacit undercurrents of social life. Identifying salient themes, recurring ideas or language and patterns of belief that link people and settings together is the most intellectually challenging phase of data analysis and one that can integrate the entire endeavour. For some authors (e.g. Bogdan & Biklen 2007: 173) categorisation and coding can be regarded as two distinct steps while others (Flick 2006; Kreuger & Neuman 2006; Grinnel & Unrau 2005) regard these as simultaneous activities: mechanical data reduction and analytical categorisation of data into themes that reflect the hard work of reducing mountains of raw data into manageable piles.

The process of category generation involves noting regularities in the setting or people chosen for study. As categories of meaning emerge, one searches for those that have internal convergence and external divergence, that is the categories should be internally consistent but distinct from one another. Here one does not search for the exhaustive and mutually exclusive categories of the statistician, but instead identifies the salient, grounded categories of meaning held by participants in the setting. Grinnell and Unrau (2005: 410) refer to this task as "first-level coding": " ... a combination of identifying meaning units, fitting them into categories and assigning codes ... ." This first-level coding produces a solid foundation from which to further refine the data in "second-level coding": "interpreting what the first-level categories mean", and shifting from the context of the interviewee to the context of the categories. It is difficult, especially in a broad database, to break the information down into five or six categories, but the process involves reducing the data to a small, manageable set of themes to write into the final narrative.

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For Grinnell and Unrau (2005) the primary task of coding is to identify and label relevant categories or topics of data. One then applies some coding scheme to those categories and themes, and diligently and thoroughly marks passages in the data using the codes. Bogdan and Biklen (2007: 173) point out that developing a coding system implies a number of steps:

> You search through your data for regularities and patterns as well as for topics your data cover, and then you write down words and phrases to represent these topics and patterns. These words and phrases are coding categories. They are a means of sorting the descriptive data you have collected ... so that the material bearing on a given topic can be physically separated from other data.

Codes may take several forms: abbreviations of key words, coloured dots, numbers – the choice is up to the researcher. Computer software programs for data analysis typically rely on abbreviations of key words. Whatever system is planned, it is inevitable that the scheme will undergo changes – coding is not a merely technical task. As one codes the data, new understandings may well emerge, necessitating changes in the original plan.

Two analytic procedures are basic to the coding process, although their nature changes with each type of coding. The first pertains to the making of comparisons, the other to the asking of questions. As discussed in Chapter 18, grounded theory is often referred to in the literature as "the constant comparative method of analysis" (Glaser & Strauss 1967) and, as such, a discussion of the basic analytical procedure of making comparisons can often be found in literature on the grounded theory approach. This procedure is not, however, limited to this approach. A closer study of these procedures comprises the following:

- The *labelling of phenomena* or conceptualising of data becomes the first step in analysis. Breaking down and conceptualising means taking apart an observation, a sentence or a paragraph, and giving each discrete incident, idea or event a name, something that stands for or represents a phenomenon. This is done by comparing incident with incident as we go along so that similar phenomena can be given the same name (Charmaz 2006; Locke 2001). Otherwise we would wind up with too many names that could result in confusion. Once we have identified particular phenomena in data, we can begin to group our concepts around them. This is done to reduce the number of units with which we have to work.

- The process of grouping concepts that seem to pertain to the same phenomenon is called *discovering categories*. The authors use the term "seem to" because at this point any proposed relationships are still considered tentative. However, the phenomenon represented by a category is given a conceptual name which should be more abstract than that given to the concepts grouped under it.

- *Naming a category* has conceptual power because the researcher pulls together groups of concepts or subcategories. These are simply generated by the researcher. The name one chooses, Strauss and Corbin (1990: 67) contend, is usually the one that seems most logically related to the data it represents, and should be graphic enough to remind one quickly of its referent. But, and this is

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important, it must be a more abstract concept than the one it denotes. Another important source of names is the words and phrases used by informants themselves – catchy ones that immediately draw one's attention to them. These terms are called *in vivo* codes.

- When researchers begin to *develop categories in terms of their properties and dimensions*, they do so first in terms of their properties, which can then be dimensionalised. Properties are the characteristics or attributes of a category, and dimensions represent locations of a property along a continuum. This process (also discussed as open coding in terms of grounded theory) stimulates the discovery not only of categories, but also of their properties and dimensions (Charmaz 2006; Locke 2001). An example is the category of "colour". Its properties include shade, intensity, value, and so forth. Each of these properties can be dimensionalised; that is, they vary along continua. Thus colour can vary in intensity from bright to dull, in value from darker to lighter, and so forth. Any property will have subproperties. Each in turn can be dimensionalised, if analysis calls for it.

Coding may be applied in various degrees of detail, including line by line, sentence by sentence, paragraph by paragraph, or can even be linked to whole texts (Flick 2006: 300; Charmaz 2006). Generating one's categories early through line-by-line analysis is important when conducting open coding in the grounded theory approach because categories also become the basis of one's theoretical sampling. In coding by sentence or paragraph, the researcher might ask: What is the main idea brought out in this sentence or paragraph (of an interview, field note or other document)? Give it a name. Then go back and underline more detailed analysis on that concept. This approach to coding can be used at any time, but is especially useful when one has several categories already defined and now wants to code around them. In taking an entire document, observation or interview one asks: What seems to be "going on" here? What makes this document similar to or different from the previous one that I coded? Having answered these questions, one might return to the data and specifically analyse for those similarities or differences. Initial names for concepts are often written straight onto the interview notes, field notes or other documents. Categories and the concepts pertaining to them are then taken from the pages and written as code notes (a type of memo). There are many different ways of doing this recording, and each person must find the method that works best for him or her (Strauss & Corbin 1990: 73).

While the nature and extent of coding practices differ across the traditions of qualitative data analysis available (see Creswell 2007 and Flick 2006), grounded theory in particular offers a specific set of information concerning coding and this is explained here in more detail for its increased use and relevance to the human services. All of these levels of coding are not expected in all the different qualitative traditions. The grounded theory approach utilises three methods of coding:

- *Open coding* is the part of analysis that pertains specifically to the naming and categorising of phenomena through close examination of data as outlined above. It involves the process of breaking down, examining, comparing, conceptualising and categorising data. Without this first, basic analytical step, the rest of the

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analysis and communication that follows could not take place. During open coding the data are broken down into discrete parts, closely examined and compared for similarities and differences, and questions are asked about the phenomena as reflected in the data.

- *Axial coding* is a set of procedures whereby data are put back together in new ways after open coding by making connections between categories using a coding paradigm involving conditions, context, action or interactional strategies and consequences (Strauss & Corbin 1990: 96–97). Axial coding thus puts those data back together in new ways by making connections between a category and its subcategories. In other words, according to Strauss and Corbin, we are still concerned with the development of a category, but development beyond properties and dimensions. Although open and axial coding are distinct analytic procedures, when researchers are actually engaged in analysis they alternate between the two modes.

  In grounded theory we link subcategories to a category in a set of relationships denoting causal conditions, phenomena, context, intervening conditions, action/interaction strategies and consequences. Highly simplified, the model looks something like this:

  (A) Causal conditions — (B) Phenomenon — (C) Context — (D) Intervening conditions — (E) Action/interaction strategies — (F) Consequences

  By implementing this model, the researcher is enabled to think systematically about data and to link them in more complex ways. Each one of these elements of the model is discussed in detail by Strauss and Corbin (1990: 99–107) in order to make the paradigm model come alive to the prospective researcher.

- *Selective coding* is the process of selecting the core category, systematically relating it to other categories, validating those relationships and filling in categories that need further refinement and development. During the coding process, the researcher constantly moves between these three methods. However, as Strauss and Corbin (1990: 58) contend, the lines between one type of coding and the next are artificial. The different types do not necessarily take place in sequence. In a single coding session, one might quickly and without hesitation move between one form of coding and another, especially between open and axial coding. Selective coding is defined by Strauss and Corbin (1990: 116) as the process of selecting the core category, systematically relating it to other categories, validating those relationships and filling in categories that need further refinement and development. After some time (probably months) of collecting and analysing data, the researcher is now confronted with the task of integrating his or her categories to form a grounded theory. This is a task that even seasoned researchers find difficult. It is a complicated process, but of course it can be done. It is not very different from axial coding, but takes place at a higher, more abstract level of analysis.

The study of Barnard (2008) serves as an example of the application of the three methods of coding in the grounded theory approach. The study aimed to derive new insights into and understanding of the experience and meaning of integrity and integrity development in the context of the South African workplace. More specifi-

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cally, the study conceptualises the construct of integrity in order to provide a new way of looking at integrity in the workplace. Being a grounded theory study the researcher's interpretations and findings had to be grounded in the participants' social reality in order to present a valid reflection of the phenomenon of integrity. The implementation of the design in this study was discussed in Chapter 18. Here we highlight some of the decisions the researcher made with regard to the coding.

Throughout her research Barnard (2008) used the constant comparative method introduced by Glaser and Strauss (1967) to generate and analyse the data. The first step in her analysis entailed the generation and identification of categories from interview transcriptions, also referred to as open coding (Strauss & Corbin 1990) or initial coding. Generating a category entailed what Locke (2001) refers to as assigning meaning to a data incident or incidents, and capturing it by naming the data incident, thus creating a conceptual category. As such the name or label of the category represented Barnard's (2008) interpretation of the data incidents. True to the convention of a line-by-line analysis (see Charmaz 2006; Strauss & Corbin 1990; Flick 2006) the objective was to generate as many categories as possible that fit the data. A line-by-line analysis of the first three interviews generated 470 seemingly unrelated codes. The sheer number of categories and the uncertainty whether categories could be regarded as conceptual (whether they were descriptive and characteristic of the data incident they presented, rather than a mere naming or labelling) created feelings of uncertainty and confusion during the first stages of the research. It was only through the continued naming of categories by adding additional transcribed interviews and by moving to the next step of comparing data incidents with the conceptual categories already identified (thus using the constant comparative method of analysis), that categories could be integrated and refined. It was found that initial categories presented a lower level of abstraction, but, as explained by Glaser and Strauss (1967), as categories were compared with one another they were integrated to form another category that was more abstract in its meaning.

The number of categories decreased as Barnard (2008) continued to analyse new transcriptions and started conceptualising them by studying their properties. Theoretical saturation was reached when no new categories emerged. In conceptualising the categories, Barnard (2008) started to rely much on the step of memoing (as discussed above). Barnard (2008) captured ideas and thoughts that helped her to make sense of the data and the categories she had drafted right after analysing the first interview. Memos assisted Barnard (2008) in capturing the conceptual significance of categories and guided her in the rigorous analytical explication of the categories.

The second phase in the grounded theory analysis of Barnard's (2008) study related to the integration of categories called selective or theoretical coding (Glaser & Strauss 1967). In the selective coding phase, conceptual categories that have already been drafted are organised in a conceptual scheme or framework that presents their interrelationships. The strategies of naming, comparing and memoing were still evident in this phase (Locke 2001) but the focus in each strategy changed somewhat. At this stage Barnard (2008) continued to conceptualise categories by naming and comparing, but the analysis seemed to be at an increasing level of abstraction, hence, according to Locke (2001), deepening the development of conceptual categories. A further level of abstraction was attained by comparing conceptual categories with one another to clarify mutual relationships and organise them in the emerging con-

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ceptual scheme or framework that would ultimately describe the phenomenon being studied (cf. Charmaz 2006; Locke 2001). Barnard (2008) states that she did (unknowingly at that stage) start to use another form of memoing mentioned by Locke (2001), namely drawing mind maps, diagrams and graphic representations of the categories and the way in which they were interrelated.

During the next phase, still guided by an increasing theoretical sensitivity, the categories were further delimited. This phase, initially operationalised by Glaser and Strauss (1967), is similar to what Strauss and Corbin (1990) refer to as selective coding or Charmaz's (2006) theoretical coding. The primary objective of data analysis during this phase was to identify and distinguish core categories from peripheral ones (Glaser & Strauss 1967; Locke 2001). Strauss and Corbin (1990:117) contend that selective coding is not much different to axial coding: " ... it is just done at a higher more abstract level of analysis." At this stage, Barnard (2008) had already developed the categories most pertinent to integrity and integrity development. She had already given them richness and density and started to consider and develop interrelationships between categories (cf. Charmaz 2006; Strauss & Corbin 1990) based on indications from the data and on her broadening theoretical background on integrity. The grouping of categories now needed clarification, suggesting conceptualisation of a group of categories on a higher level of abstraction. Barnard (2008) again employed naming and comparing as well as memoing to develop both a group of categories and their potential relationships. Through this process she identified and conceptualised five core themes which she believes provided a presentation of the construction of integrity in the South African work context.

An explication of the interrelationships between the core themes resulted in a conceptual framework of integrity and integrity development. The conceptual framework shows the core themes, their related primary categories as well as the properties of each category. Barnard found the themes, categories and their properties in the conceptual framework to be descriptive of integrity and integrity development in the South African work context as a basis for a substantive model of these constructs. Following Locke (2001), the theoretical saturation of the categories was reviewed during this stage as a predetermination of decisions to discard or ignore immaterial categories. On this basis three categories were rejected. The final stage of data analysis was the writing-up of the emerging theory.

6. TESTING EMERGENT UNDERSTANDINGS AND SEARCHING FOR ALTERNATIVE EXPLANATIONS

As categories and themes are developed and coding is well underway, Kreuger and Neuman (2006: 452) suggest beginning the process of evaluating how things that are *not in the data* can be important for analysis. This entails a search through the data during which one challenges the understanding, searches for negative instances of the patterns and incorporates these into larger constructs, as necessary. Part of this phase is evaluating the data for their usefulness and centrality. One should determine how useful the data are in illuminating the questions being explored and how central they are to the story that is unfolding about the social phenomenon being studied. Lewis and Lewis in Kreuger and Neuman (2006: 453) offer seven kinds of "negative evidence" to consider:

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1) *Events that did not occur.* On the basis of past experience, a researcher can expect certain events to occur and should explore the significance to the data if they did not.
2) *Events of which the population is unaware.* The fact that research participants are unaware of an issue core to the research does not mean that a researcher should fail to consider its influence.
3) *Events the population wants to hide.* In an attempt to protect themselves or others, respondents may misrepresent events and significant data.
4) *Overlooked commonplace events.* Routine events may lead to a take-for-granted attitude that ignores information important to the research.
5) *Effects of a researcher's preconceived notions.* Strong notions on what may be relevant may inhibit a researcher from noticing disconfirming evidence.
6) *Unconscious non-reporting.* Events that may have appeared not worth reporting may reveal important data.
7) *Conscious non-reporting.* A researcher may decide not to present data that fail to support the argument.

As one discovers categories and patterns in the data, one should engage in critically challenging the very patterns that seem so apparent. One should search for other, plausible explanations for these data and the linkages among them. Comparisons between the extremes of a dimension or with phenomena from completely different contexts are ways to challenge the contents of a category and explore alternative explanations (Flick 2006).

7. INTERPRETING AND DEVELOPING TYPOLOGIES

Interpretation involves making sense of the data, the "lessons learned". Several forms exist, such as interpretation based on hunches, insights and intuition; interpretation within a social science construct or idea; or a combination of personal views and a social science construct or idea. Flick (2006) mentions that although interpretation is at the core of qualitative data analysis, its importance is seen differently in the various approaches or strategies. The researcher should know the different approaches to coding empirical material. But mostly it is agreed that at this point in the analysis researchers step back and form broader opinions of what is going on with the data.

Developing typologies or systems for categorising things or concepts is a very useful aid when making sense of qualitative materials. As Taylor and Bogdan (1998: 144) write: "By developing typologies, you begin to make conceptual linkages between seemingly different phenomena. This in turn, helps you to build theory." As discussed in Chapter 2, a typology may be defined as a conceptual framework in which phenomena are classified in terms of the characteristics that they have in common with other phenomena. The criteria for good typologies are exhaustiveness and mutual exclusiveness. As far as possible, a given type should include all possible relevant characteristics that are associated in a single classification (exhaustiveness). In addition, the different types that comprise the typology should, as far as possible, be mutually exclusive and any overlap between categories eliminated through a process of further refinement (exclusiveness). Any overlap between cate-

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gories ought to be eliminated through a process of further refinement (exclusiveness).

Two kinds of typology can generally be distinguished. The one is related to the *emic* approach (see Patton 2002) or *first-order* interpretation (Kreuger & Neuman 2006). A first-order classification is based on the categories of meaning of the people being studied. According to Kreuger and Neuman (2006: 161), the researcher " ... interprets data by finding out how people being studied see the world, how they define the situation, or what it means for them". In this first-order interpretation a qualitative researcher thus interprets data by giving them meaning or making them understandable with the point of view of the people being studied. The other typology is connected to the researcher's own discovery and reconstruction of the first-order interpretation (or those used by other researchers and/or found in the relevant literature), because the researcher comes in from the outside to interpret the data. This scheme is called the *etic* approach (see Watson 1981) or *second-order* interpretation (Kreuger & Neuman 2006). Here, the researcher elicits an underlying sense of meaning in the data. While it is certainly true that qualitative researchers generally demarcate patterns, categories and themes by means of indigenous typologies, they often also use foreign ones.

Both these approaches can be illustrated to a greater or lesser extent in two somewhat dated qualitative studies. The study "Business women exchanging sex for money" reported by Schurink and Levinthal (1983) provides a good example of a foreign typology in prostitution literature, while Lötter and Schurink (1984) aptly illustrate indigenous typologies in a study on prison gangs. Table 24.1 outlines the foreign typology of prostitute work roles as developed by Miller (1978) and used in the study "Business women exchanging sex for money".

Through the analysis of data in the study, it was discovered that the work roles of the prostitutes generally corresponded to Miller's (1978) first three types. Those prostitutes who worked in bars, hotels, shebeens and on the street seem to be close to his "non-exclusive, independent prostitute" (type 1), while club prostitutes and "higher class" prostitutes, such as businesswomen and society girls, respectively albeit not so clearly, resembled his "non-exclusive, organizationally" (type 3) and "exclusive, independent" (type 2) prostitute categories (Schurink & Levinthal 1983: 162).

Table 24.2 outlines the prison gangs study (Lötter & Schurink 1983) with the typology of rankings of the 28 gang and their "badges" and/or "equipment". Towards the end of the study, in interpreting patterns and themes that started emerging from the data, the researchers constructed various indigenous, *emic* or *first-order* typologies (e.g. the social structures of the number gangs, forms of violence, etc.). They also used foreign, *etic* or *second-order* taxonomies (e.g. Parson's functional imperatives) in attempting to describe the world of gangs in South African prisons.

Prisons where gangs are active are usually dominated by the number gangs. All these have a quasi-military structure and each has its own culture and tradition, which has been orally transferred. The number 28 gang (as can be gathered from Table 24.2) has two lines. The Bloodline, divided into a junior (number 3s) and senior section (division 1), denotes the fighters, and the Private line with ranks such as "probationer", silver and goliat (goliath) in the junior section (number 2s), and "magistrate" (*umgobi*), "clerk" (*mabalang*), "inspector", "doctor" and "government"

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SECTION D

("governor") in the senior section (divison 1), consists of *wyfies* (catamites) and "officers" who have worked themselves up from the rank of the *wyfie*. To a great extent the structure of the gang determines the communication between gang members.

The two examples of typologies point to another way data can be organised, namely representing it visually. This will subsequently receive attention.

3.1.3 Visualising, representing and displaying the data

8. PRESENTING THE DATA

In the final phase of the spiral, the researcher presents the data, a packaging of what was found in text, tabular or figure form. Babbie (2007: 389) refers to this process as "concept mapping". For example, creating a visual image of the informa-

Table 24.1 Diagram of types of prostitute work roles

Type	Customer exclusivity	Organisational affliction
Type 1: non-exclusive, independent prostitute	Low	Low
Type 2: exclusive, independent prostitute	High	Low
Type 3: non-exclusive, organisationally afflicted prostitute	Low	High
Type 4: exclusive, organisationally afflicted prostitute	High	High

Source: Miller (1978)

Table 24.2 Schematic representation of the number 28 gang

Private line	Bloodline
Division 1 "Nonzala" (no "badge") "Government" (7 "silver" & 7 "gold stars") "Doctor" (6 "gold" & 6 "silver pipes") "Inspector" (6 "gold" & 6 "silver stars") "Mabalang" (4 "gold" & 4 "silver stars") "Magistrate" (3 "gold" & 3 "silver stars") "Landdros" (2 "stars")	**Division 1** "Lord" (no "badge") "Judge" (7 "silver" & 7 "gold stars") "General" (6 "silver" & 6 "gold stars") "Colonel" (4 "silver" & 4 "gold stars") "Captain" no. 1/"Wireless" (3 "stars") "Jim Crow" (2 "silver" & 2 "red/gold stars")
Number Twos "Goliat 1" (white "handkerchief"/"oxtail") "Goliat 2" ("keys") "Masilva 1" (1 "key") "Masilva 2" ("silver key"/"crayon") "Probationers" (white "handkerchief")	**Number Threes** "Captain 1" (4 "stripes" & "castle") "Captain 2" (4 "stripes"/"rifle") "Sergeant 1" (3 "stripes"/"ammunition") "Sergeant 2" (2 "stripes"/"knapsack") "Soldiers" ("assegai"/".303 rifle")

Source: Lötter & Schurink (1984)

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tion, a researcher may present a "comparison" table or a matrix, for example a cross tabular (2×2) table that compares men and women in terms of one of the themes or categories in the study. The cells contain text, not numbers as indicated in the discussion above. A hierarchical tree diagram is another form of presentation. This shows different levels of abstraction, with the boxes at the top of the tree representing the most abstract information, and those at the bottom representing the least abstract themes.

Hypotheses or propositions that specify the relationship between categories of information also represent information. In grounded theory, for example, investigators advance propositions that interrelate the causes of a phenomenon with its context and strategies. Some authors use metaphors to present the data – literary devices in which something borrowed from one domain applies to another. Although metaphors can be an effective method to communicate ideas, Kreuger and Neuman (2006) warn that overused metaphors are a sloppy, unimaginative method of expression.

Writing about qualitative data cannot be separated from the analytic process. It is central to that process as the researcher engages in the interpretive act when shaping the raw data. Gibbs (2007: 25) puts this as follows: "In a very real sense, writing up your notes and writing the final narrative account of your work are, especially in qualitative research, central parts of the analysis itself." Quantitative researchers often view the writing phase as a separate and final step in completing a research project. However, for qualitative researchers, the process of writing is an integral part of understanding the "story" of the data.

> Crafting a qualitative manuscript is a process through which the writer clarifies how his data and concepts fit together. This process is much like putting together a puzzle. You may try ordering the "puzzle pieces" in an initial pattern, but through additional writing, organizing, and contemplating, you may find several ways of placing the "pieces" together (Warren & Karner 2005: 219).

Despite interest in alternative dissemination strategies and reporting formats, the written report remains the primary mode for reporting the results of research. More information on this topic has been offered in Chapter 17 of this book.

4. ASSESSING THE QUALITY OF QUALITATIVE RESEARCH

The conventional criteria for good research as discussed in Chapter 12 are: (i) internal validity; (ii) external validity or representativeness; (iii) reliability; and (iv) objectivity. Qualitative researchers generally regard these constructs as inappropriate in establishing the "truth value" of a qualitative research project. Two prominent qualitative researchers, Lincoln and Guba (1999), propose the following four alternative constructs they believe reflect the assumptions of the qualitative paradigm more accurately. The first of these criteria, namely credibility, is considered to be the most important one.

1. *Credibility/authenticity*. This is the alternative to internal validity, in which the goal is to demonstrate that the inquiry was conducted in such a manner as

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to ensure that the subject has been accurately identified and described. The researcher asks if there is a match between research participants' views and researchers' reconstruction and representation of them. The strength of the qualitative study that aims to explore a problem or describe a setting, a process, a social group or a pattern of interaction will be its validity. An in-depth description showing the complexities of variables and interactions will be so embedded with data derived from the setting that it cannot help but be valid. Within the parameters of that setting, population and theoretical framework, the research will be valid. A qualitative researcher should therefore adequately state those parameters, thereby placing boundaries around the study. Lincoln and Guba (1999) outline various strategies for increasing the credibility of qualitative research:

- Prolonged engagement and persistent observation in the field
- Triangulation of different methods
- Peer debriefing
- Member checks
- Formalised qualitative methods such as grounded theory and analytic induction

2. *Transferability.* Here the researcher asks whether the findings of the research can be transferred from a specific situation or case to another. Lincoln and Guba propose this as the alternative to external validity or generalisability, in which the burden of demonstrating the applicability of one set of findings to another context rests more with the investigator who would make the transfer than with the original investigator. A qualitative study's transferability or generalisability to other settings may be problematic. The generalisation of qualitative findings to other populations, settings and treatment arrangements – that is its external validity – is seen by traditionalists as a weakness in the approach. To counter challenges, the researcher can refer back to the original theoretical framework to show how data collection and analysis will be guided by concepts and models. By doing so, the researcher states the theoretical parameters of the research. Those who conduct policy or design research studies within those same parameters can then determine whether or not the cases described can be generalised for new research policy and transferred to other settings, while the reader or user of specific research can see how the research ties into a body of theory. One additional strategic choice can enhance a study's generalisability: triangulating multiple sources of data. Data from different sources can be used to corroborate, elaborate or illuminate the research in question. Designing a study in which multiple cases, multiple informants or more than one data-gathering method are used can greatly strengthen the study's usefulness for other settings.

3. *Dependability.* Here the researcher asks whether the research process is logical, well documented and audited. This is the alternative to reliability, in which the researcher attempts to account for changing conditions in the phenomenon chosen for study as well as changes in the design created by an increasingly refined understanding of the setting. This represents a set of assumptions very different from those shaping the concept of reliability. Positivist notions of reli-

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ability assume an unchanging universe where inquiry could, quite logically, be replicated. This assumption of an unchanging social world is in direct contrast to the qualitative/interpretive assumption that the social world is always being constructed, and the concept of replication is itself problematic.

4. *Conformability*. The final construct, confirmability, captures the traditional concept of objectivity. Lincoln and Guba (1999) stress the need to ask whether the findings of the study could be confirmed by another. By doing so, they remove evaluation from some inherent characteristic of the researcher (objectivity) and place it squarely on the data themselves. The question is whether the researcher provides evidence that corroborates the findings and interpretations by means of auditing.

Qualitative researchers have become increasingly uncomfortable with the criteria as outlined above and have challenged with renewed intensity the use of Lincoln and Guba's (1999) criteria to assess qualitative studies. They argue that these criteria are incompatible with the features of qualitative research and that it is unfair to use criteria based on positivism to assess qualitative (interpretative and constructivistic) research. The belief that qualitative research would achieve paradigm take-off by imitating the methods of the natural sciences has been thus to a greater extent discarded by qualitative researchers have and in particular by postmodernists (Schwandt 2007: 40). In the process, qualitative researchers have come up with more and more checklists and frameworks for the development of alternative criteria based on qualitative research principles (Flick 2007).

It appears that currently at least three distinct perspectives on assessing the quality of qualitative research are found among scholars. These perspectives are: (i) qualitative and quantitative research should be evaluated by the same measures; (ii) qualitative research should be evaluated by standards that have been particularly developed for it; and (iii) what Holloway and Wheeler (2002) call *criteriology* should be abandoned. The notion of developing criteria of soundness to meet the approval of all qualitative researchers with their different approaches, theoretical backgrounds, methodological principles, research issues and aims is being increasingly discarded or, as Schwandt (2007) states, qualitative researchers have *gone beyond it*.

This does not, however, mean that qualitative research has become unscientific and that anything now goes. Since a clear and universal solution to the quality question on the level of criteria for good qualitative research has to date been unattainable, researchers have started to move to the use of strategies to promote quality in the research process. Apart from the criteria developed by Lincoln and Guba (1999), there are various approaches to evaluate the quality of one's research. Some researchers evaluate their research on the basis of the strengths and limitations inherent in the methodology they applied (see Nell 2005). Others underline the research process and therefore emphasise rigour and authenticity (or trustworthiness), researcher credibility, the argumentative defensibility of the scientific report and the transferability of findings. Some studies follow a more pragmatic approach that questions the applicability or instrumental value of the research. Kelly (2004) emphasises that standards for good research should not contradict the fundamental

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interpretative epistemology of qualitative research and should therefore, as Marshall and Rossman (1999) state, defend the qualitativeness of the study. Thus the notion of management of the research process, transparency with specific reference to the auditing trail or research story and reflexivity have become more important strategies for ensuring quality research than the four criteria offered by Lincoln and Guba (1999).

An auditing trail is a systematically maintained documentation process of the researcher's continuous critical analysis of all decisions and actions taken during the entire research process. The auditing trail displays the interaction between us and our subject(s) in such a way that the research can be understood not only in terms of *what* was discovered but also *how* it was discovered. The advantage of this is that our interpretations can be better understood and validated by readers who are informed about the position we adopt in relation to the study and by our explicit questioning of our own involvement. This means that interpreting one's own interpretations, looking at one's own perspectives and turning a self-critical eye on one's own authority as interpreter and author enhances the trustworthiness of the findings and the outcomes of the research (Etherington 2006).

It is important to note that the postmodern trend in qualitative research encourages researchers to undertake and record a continuous critical analysis of their thinking and feelings concerning their conceptual framework, research questions, methods, values and biases, and awareness of their presence in the very situations they want to study. This analysis should also reflect the intersubjective dynamics between themselves as researchers and the research they are conducting. Such a writing style forms an important tool that could be used to enhance the quality of research. Questions about quality criteria should therefore be "reflexively embedded" (Etherington 2006) in the research story or auditing trail, and should thus be considered and formulated in line with the research questions, the design and the execution of the research.

It is clear from the above that assessing the quality of qualitative research is no easy matter. Flick (2007: 1–2) puts this as follows:

> In contrast to earlier stages in the development of qualitative research, questions about the quality of qualitative research are no longer raised mainly to demonstrate (from outside) that there is a lack of scientific quality in qualitative research. Rather this question is increasingly raised from the inside with a "how to" perspective: how to assess or evaluate what we are doing, how to demonstrate quality in qualitative research in an active and self-confident way.

How to manage the issue of quality in the qualitative research process has become a topic of major relevance for the further development of qualitative research as a whole. The focus of the discussion about the quality of qualitative research has not completely, but largely, shifted from fundamental, epistemological and philosophical levels to more concrete and practical levels of research. We conclude with our position that as far as qualitative data analysis is concerned, researchers should take equally great care in how they go about analysing data and describing the steps as they do in the actual application of techniques and procedures.

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SUMMARY

This chapter deals with phase 5 in the research process concerned with data analysis, interpretation and presentation. It highlights the nature of qualitative data and qualitative data analysis before the process of data analysis and the application of this process is discussed as comprising the main steps of *preparing and organising the data* (including planning for recording of data, data collection and preliminary analyses, managing the data and reading and writing memos); *reducing the data* (including generating categories and coding the data, testing the emergent understandings and searching for alternative explanations, and interpreting and developing typologies); as well as *visualising, representing and displaying the data*. The chapter closes with the debates on the criteria for assessing the soundness of qualitative data.

This chapter concludes the section on steps unique to the qualitative process.

Self-evaluation and group discussion

- Outline the main differences and similarities between qualitative and quantitative data by using your own data as an example.
- Explain the criteria you regard as important in ensuring the soundness of the qualitative data in your study.

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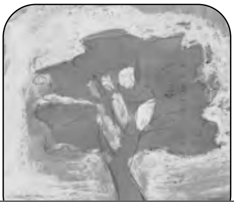

25

CSL DELPORT & CB FOUCHÉ

The qualitative research report

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with the distinctive character of the qualitative research report
- gain an understanding of the criteria of a good qualitative report
- discover the elements of importance in a qualitative report.

1. INTRODUCTION

Chapter 17 contains a comprehensive discussion of the basic elements of a research report, comprising the definition of the report, the purpose, requirements, sections and technical aspects. The purpose of this chapter is not to repeat these aspects, but to focus on those which are unique to the qualitative research report. Readers themselves can select and integrate those elements from Chapter 17 that are relevant to the qualitative report.

2. THE DISTINCTIVENESS OF THE QUALITATIVE REPORT

The qualitative report is in essence more complicated than the quantitative report, as the qualitative report is as follows:

- *Less structured.* According to Leedy and Ormrod (2005: 143), "qualitative research is, by its very nature, flexible and open-ended, and so it continues to evolve over the course of the project". Esterberg (2002: 207) also mentions that "qualitative research reports traditionally have been more flexible than reports of quantitative research".

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- *More intertwined with the total research process.* Writing about qualitative data "is not a discrete step in the qualitative research process ... you should write throughout the time of data collection and analysis" (Glesne 2006: 176). Babbie (2004: 309) confirms this element: "In field research, observation, data processing, and analysis are interwoven, cyclical processes."
- *Often longer and more descriptive.* "Qualitative researchers may use more varied and literary writing styles, which increase length" (Neuman 2000: 473).

Various authors identify the length and narrative or descriptive nature of the qualitative report as being its most distinctive characteristic. Thus, authors such as Creswell (1998), Erlandson et al. (1993), Neuman and Kreuger (2003: 487–488), and Neuman (2000: 473) point out certain factors that contribute to the length of the qualitative report, but that, in essence, also comprise its uniqueness. These factors can be summarised as follows:

- As qualitative data in the form of words, pictures and quotes are more information rich than quantitative data in the form of numbers, the report is more difficult to condense. Authors often integrate the voice of the participants in the report.
- In addition to factual evidence, qualitative researchers tend to give subtle descriptions and multiple perspectives to help the reader gain a feel for the subjective world of the respondents – thus transporting the reader directly into the world of the study.
- As qualitative researchers use flexible designs that evolve throughout the research process, they will use the report to explain in more detail their methodologies – that is, techniques of gathering data, analytic categories, etc.
- The exploratory nature of qualitative research leads to the development of new concepts or theory. The qualitative researcher takes notes and considers alternative interpretations of the data. The importance of conveying this information to the reader adds to the length of the report.
- The narrative writing style of the qualitative researcher increases the length of the report, as it is personal, familiar and friendly.

The goals of the different reports remain the same, in spite of the distinctive character of the qualitative report – that is it communicates the scientific research process followed, data obtained and the results thereof to a target group. However, Babbie (2007: 503), Berg (2007: 344), Esterberg (2002: 206), Monette, Sullivan and DeJong (2002: 484), and Creswell (1998) emphasise that the content and format of the report and how the findings are presented depend on the audience with whom one is communicating – that is, colleagues, respondents, policy makers, academics or the general public.

3. CRITERIA FOR A GOOD QUALITATIVE REPORT

Apart from the general criteria for a good research report, as outlined in Chapter 17, certain specific criteria are particularly applicable to a qualitative report. The

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nature of the qualitative study, or the strategy or design selected for the study will, to a large extent, influence the nature of the report, but all good qualitative reports should meet certain criteria. Guba and Lincoln (1989) have identified four categories of criteria that we can generalise to all qualitative reports in the following manner:

- *Axiomatic criteria.* The report must clearly and self-evidently reflect the guiding paradigm or axiom of the study.
- *Rhetorical criteria.* Simplicity, clarity and craftmanship should form the basis of the qualitative researcher's report.
- *Action criteria.* The report should evoke action on the part of the reader and should, therefore, be educative and reflect empowerment as part of the report.
- *Application or transferability of criteria.* The inclusion of detailed descriptions and vicarious experiences whereby readers can draw inferences relating to their own situation adds to the quality of the report.

Apart from the distinctive characteristics of the qualitative report and the particular criteria that such a report should meet, certain important decisions have to be made with regard to the inclusion of certain elements in a qualitative report. These are discussed in more detail below.

4. THE ELEMENTS OF A QUALITATIVE REPORT

The different elements of and sections to be included in a research report were discussed in Chapter 17. The information contained in these discussions is applicable to both qualitative and quantitative reports. However, qualitative reports are not so strictly formalised in terms of structure. On the contrary, qualitative reports rarely follow a fixed format with standard sections. In this regard, Richardson (2000: 923–928) emphasises the fact that in recent years qualitative researchers have begun to present their work in more creative formats. Theoretical generalisations and data are not separated in distinct sections as with a quantitative report. Furthermore, the elements that form part of the qualitative report have a "richness" that is different from a quantitative report.

The following are elements that should be incorporated in the different sections of a qualitative report and that would add to the "richness" of the elements of the report.

4.1 Quotations

Although many authors emphasise the importance of bringing the voice of the participants or respondents into the report, few authors have anything to say on the use of quotations in a qualitative report. In spite of this, many writers do use ample quotations from the data and, as such, different ways of quoting respondents have developed. Creswell (1998) distinguishes three different types of quotation:

- *Short, eye-catching quotations.* These quotations are easy to read and take up little space, but stand out from the text. They are usually used to verify something

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in the text or contain a statement of significance to highlight a certain perspective.

- *Embedded quotations.* Briefly quoted phrases within the text are called embedded quotes. These quotations illustrate a point and allow the writer to "move on". They may provide specific concrete evidence – in the respondent's words – to support a theme.
- *Long quotations.* These quotations are used to convey more complex understandings and may contain many different ideas of the respondent. They are useful when a writer wants to provide complete answers to a certain question posed, but because of space considerations, they are less popular in a report than the above.

4.2 The researcher as author

In qualitative research, the researcher is directly involved in the setting, interacts with the people and is the "instrument". As Rossman and Rallis (2003: 337) state: "You have spent time in the field, looking, asking, listening, and reading. You have interpreted events, activities, conversations, and objects and constructed your own meaning or understanding of them." As such, no qualitative report can exclude the researcher's own perspective, and consideration should be given to how that might have shaped events and interpretations. Marshall and Rossman (1995) maintain that the extent to which researchers planned their participation in the study or outlined their role should determine the extent to which their own perceptions will be reflected in the report.

Creswell (1998) suggests that researchers/authors could use different strategies to convey their position. They may want to disclose in the report their biases, values and context, all of which may have shaped the narrative, or they can be "present" in the report through devices such as an epilogue, reflective footnote or commentaries, or include a section in the report on their own role.

Glesne (2006: 174–175) identifies the following three possible roles of the writer of qualitative inquiry:

- *Artist.* "As artists, they seek imaginative connections among events and people, imaginative renderings of these connections, and imaginative interpretations of what they rendered. They do this not just in the worthy cause of making their work accessible, but, in addition, to do full justice to what they have endeavoured to understand" (Glesne 2006: 174).
- *Translator/interpreter.* Glesne (2006: 174–175) explains this role as follows: "As translator, the researcher works to understand the other's world and then to translate the text of lived actions into a meaningful account. To the contrary, qualitative researchers are also interpreters who draw on their own experiences, knowledge, theoretical dispositions, and collected data to present their understanding of the other's world. But as interpreters, they think of themselves not as authority figures who get the 'facts' on a topic, but as meaning makers who make sense out of the interaction of their own lives with those of research participants."

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- *Transformer*. Glesne (2006: 175) does not refer to the role of transformer in the sense of reformer but rather to the role of "catalytic educator", explaining it as follows: "As others read your story, you want them to identify with the problems, worries, joys, and dreams that are the collective human lot. By reflecting on themselves and their families, friends, and associates, they acquire new insights and perspectives on some aspect of human interaction." Writing up one's work so that it contributes to transformative experiences requires the application of disciplined procedures and artistic creativity to meaningful data.

4.3 Evidence to establish credibility

According to Rossouw (2003: 178–180), credibility in qualitative research is the concept equivalent to internal validity in quantitative studies, and as such it refers to the degree to which findings, and by implication the methods that are used to generate the findings, can be trusted.

A qualitative report might be viewed with more scepticism than a quantitative report. Therefore, the researcher must take time and effort to ensure that a detailed account of credible procedures is included in the report. Ways of ensuring credibility are discussed elsewhere in this book, but what is important here is for the researcher to remember the importance of including an account of the selected measures: "The key is to provide readers with enough evidence so that they believe the recounted events and accept the interpretations as plausible" (Neuman 2000: 474).

5. ORGANISATION OF THE QUALITATIVE REPORT

In the report researchers synthesise their discoveries and findings for public consumption. The report is thus the critical stage in the transformation of data into knowledge, so the organisation is a reflection of their analysis and interpretations. Glesne (2006: 182–184), Rossman and Rallis (2003: 343–346) and Neuman (2000: 474–475) distinguish between the following models for organising a qualitative report:

- *Chronology*. One organisational strategy is to present events chronologically – that is, in the order they happened. If the passage of time is particularly critical to the study, then the chronology technique is appropriate.
- *Life history*. "Here you present an account of one person's life, framing the description with analytic points about the significance of that life in the light of your question and the genre" (Rossman & Rallis 2003: 344). Examples are a case study, a phenomenological study or a biographical study.
- *Themes*. Probably the most frequently used model is organisation by themes. Researchers can structure or organise their report according to meaningful themes that have emerged from their data. The general themes can also break down into categories and subcategories as sections and subsections of the report.

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- *Composite.* Sometimes findings are best presented as a composite or a "day in the life of ...", or a composite about several different people.
- *Critical events.* Critical episodes in the life of a person, event or programme provide another organisational structure.
- *Zoom lens.* According to Glesne (2006: 183), this model "involves narrowing and expanding the focus. The author moves from descriptive detail to theoretical abstraction or vice versa. Like a zoom lens, the text glides through various levels of generality". Neuman (2000: 474) describes this as follows: "Beginning broadly and then focusing increasingly narrowly on a specific topic, e.g. statements can move from universal statements about all cultures, to general statements about a specific culture, to statements about a specific cultural scene, to specific statements about an aspect of culture, to specific statements about specific incidents."
- *Portraits.* Multiple cases, critical episodes or composites may be organised and presented as portraits. Like their painted counterparts, written portraits yield a rich and textured impression of the subject over an extended but limited period of time (Rossman & Rallis 2003: 346). These portraits may also be illustrated with visual material like photographs or maps.
  - *Separate narration and analysis.* In this model the researcher first engages the reader with a narrative account of the research setting that is rich in dialogue, events and interaction. Then the writing style changes as the researcher develops his or her theories with detailed analysis of the data.
  - *Graphic displays.* Data display in tables, charts or graphs can supplement text by introducing or summarising categories or themes discussed in detail in the text.

As these various modes of organising a researcher's data suggest, it is clear that no rules or recipes exist for writing a qualitative research report. The focus is on thinking with the data as a whole and constructing meaning, rather than compartmentalising the information into sections or chapters called "review of literature", "data analysis", "findings", etc. as is the case in quantitative research.

SUMMARY

There is no agreement among authors on the elements or structure of reporting on qualitative research; in fact, there are many acceptable forms for a qualitative report. However, it would appear that most authors agree that the selection of the approach or strategy of the study will influence the nature of the report. This chapter has attempted to address those aspects generically valid for writing qualitative reports. By reading this chapter together with the relevant aspects described in Chapter 17 as being applicable to writing research reports in general, and by adapting it to the particular nature of the various qualitative designs, the reader should understand most aspects of the qualitative research report.

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SECTION D

Self-evaluation and group discussion

Search the library and databases on the Internet for a good example of a qualitative research report. Summarise the report, highlighting salient features. Present your summary to your study group.

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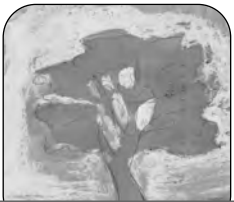
SECTION E

Types of research

FOR POSTGRADUATE (M & D) STUDENTS OR EXPERIENCED RESEARCHERS
Section E Types of research
Chapter
26. Mixed methods research
27. Evaluation research
28. Intervention research
29. Participatory action research
30. Building a scientific base for the helping professions

In this final section of the book, the mixed methods research approach is explored. Thereafter, three types of research that use both quantitative and qualitative methodologies – that is evaluation research, intervention research and participatory action research – are described.

A summary chapter on building a scientific base for the helping professions concludes this section.



26

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Mixed methods research

Learning objectives

Studying this chapter should enable the reader to

- define the concept of *mixed methods research*
- explain the rationale of using mixed methods research
- trace the origin and emergence of mixed methods research
- describe the philosophical foundations of mixed methods research
- distinguish between the major mixed methods research designs
- apply the appropriate steps in designing a mixed methods research study.

1. INTRODUCTION

In Chapter 4 of this book we introduced the subject of the quantitative and qualitative approaches by, inter alia, quoting the view of Babbie and Mouton (2001: 53) that the qualitative researcher is concerned with describing and understanding (*verstehen*) rather than explaining and predicting human behaviour; naturalistic observation rather than controlled measurement; and the subjective exploration of reality from the perspective of an insider, as opposed to the outsider perspective that is predominant in the quantitative paradigm. As such, a qualitative study is concerned with non-statistical methods and small samples, often purposively selected, while a quantitative study is based on testing a theory composed of variables, measured with numbers and analysed with statistical procedures in order to determine whether the predictive generalisations of the theory hold true (Creswell 1994: 1–2). We also emphasised the fact that by making the distinction between quantitative and qualitative approaches, we do not imply that these approaches are mutually exclusive – that a researcher must always choose to use one or the other approach for a specific study. In fact, we referred to different authors who agree that in real-life human sciences, researchers often need to combine elements of both approaches in what they call a mixed methods research approach (Alasuutari, Bick-

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man & Brannen 2008; Bergman 2008; Ivankova, Creswell & Plano Clark 2007; Kumar 2005; Leedy & Ormrod 2005; Monette, Sullivan & DeJong 2002, and Teddlie & Tashakkori 2009).

Although mixed methods research – that is the combination of at least one qualitative and at least one quantitative component in a single research project or programme – has experienced a tremendous increase in popularity in the social, behavioural and related sciences in recent years (Bergman 2008: 1), it does not mean that the mixed methods approach has been accepted without serious scholarly debate.

This chapter will focus on the concept of *mixed methods research*, the value of combining qualitative and quantitative methods in a single study and a brief discussion on the origins and philosophical foundation of mixed methods research. Attention will then be given to the different mixed methods designs and finally the chapter will be concluded with a description of the basic steps in designing a mixed methods study.

2. DEFINITION OF MIXED METHODS RESEARCH

Experts in the field of mixed methods research have varied definitions of the concept. According to Creswell and Plano Clark (2007: 5), some mixed methodologists consider this form of research as a separate methodology with its own philosophical assumption and considerations for methods of inquiry – a point of view supported by the authors of this chapter, as will soon become clear. Other mixed methods authors emphasise the combination of techniques or methods of collecting and analysing quantitative and qualitative data – which relates more to the practice of triangulation that enriches one particular approach rather than the consideration of a mixed methods approach. The difference between these two views lies primarily in the fact that "[t]riangulation commonly uses a multi-methods approach to data collection to avoid errors and biases inherent in any single methodology" (Williamson 2005: 7), and thus is more multi-method in nature (Creswell & Plano Clark 2007: 12), while mixed methods research refers to a separate methodology in which both qualitative and quantitative approaches, methods and procedures are combined or "mixed" to come up with a more complete picture of the research problem.

As mentioned above, we support the latter view of mixed methods research as a separate methodology. In this regard, Johnson and Onwuegbuzie (2004: 17) describe mixed methods research as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study". More or less in the same manner Tashakkori and Teddlie (2003: 711) define mixed methods research as "a type of research design in which qualitative and quantitative approaches are used in types of questions, research methods, data collection and analysis procedures, and/or inferences". More recently, Ivankova et al. (2007: 261) have defined mixed methods research as "a procedure for collecting, analysing and 'mixing' both quantitative and qualitative data at some stage of the research process within a single study to understand a research problem more completely". These authors emphasise that in this approach a researcher collects both numeric information (e.g. scores on a survey instrument or ratings) and text information (e.g. open-ended interviews or observations) to answer the study research questions, as well as the

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fact that the term *mixing* implies that the data or the findings are integrated or connected at one or several points within the study.

We concur with Creswell and Plano Clark's (2007: 5) more comprehensive definition in their book *Designing and conducting mixed methods research,* where they define mixed methods research as follows:

> Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

According to Creswell and Plano Clark (2007: 6–9), the following major elements of this definition are important:

- Mixed methods research involves both collecting and analysing quantitative and qualitative data, meaning a researcher collects both numeric and text information.
- The mixing of data is a unique element of mixed methods research. It means that it is not enough to simply collect and analyse quantitative and qualitative data; they need to be "mixed" in some way so that together they form a more complete picture of the problem than they do when standing alone. In this regard Johnson and Turner (2003), as quoted by Teddlie and Tashakkori (2009: 238), formulate one of the fundamental principles of mixed methods research, which is that "methods should be mixed in a way that has complementary strengths and non-overlapping weaknesses".
- Mixed methods studies may involve collecting and analysing qualitative and quantitative data within a single study or within multiple studies in a programme of inquiry.

In a nutshell it seems thus as if mixed methods investigations involve integrating quantitative and qualitative data collection and analysis into a single study or a programme of inquiry. This form of research is more than simply collecting both quantitative and qualitative data; it indicates that data will be integrated, related or mixed at some stage of the research process.

3. SCIENTIFIC VALUE OF MIXED METHODS RESEARCH

Researchers may ask the question: What is the value that mixed methods research adds that qualitative or quantitative approaches, each by themselves, do not provide? The following opinions are provided by various authors (e.g. Bergman 2008; Creswell & Plano Clark 2007; Hanson et al. 2005; Johnson & Onwuegbuzie 2004; Teddlie & Tashakkori 2009):

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- Mixed methods research enables the researcher to simultaneously address a range of confirmatory and exploratory questions with both the qualitative and quantitative approaches and therefore verify and generate theory in the same study.
- Mixed methods research provides strengths that offset the weaknesses of both quantitative and qualitative research, and therefore has the potential to provide better (stronger) inferences.
- Mixed methods research provides more comprehensive evidence for studying a research problem than either quantitative or qualitative research alone.
- Mixed methods research encourages researchers to collaborate across the sometimes adversarial relationship between quantitative and qualitative researchers. If findings are corroborated across different approaches then greater confidence can be held in the singular conclusion; if the findings conflict then the researcher had greater knowledge and can modify interpretations and conclusions accordingly. In many cases the goal of mixing is not to search for corroboration but rather to expand a researcher's understanding.
- Mixed methods research provides the opportunity for a greater assortment of divergent views and perspectives and makes researchers alert to the possibility that issues are more multifaceted than they may have initially supposed.
- Mixed methods research encourages the use of multiple worldviews or paradigms rather than the typical association of certain paradigms for quantitative researchers and others for qualitative researchers.
- Mixed methods research is "practical" in the sense that researchers are free to use all methods possible to address a research problem as well as the fact that they combine inductive and deductive reasoning processes.
- Mixed methods research eliminates different kinds of bias, explains the true nature of a phenomenon under investigation and improves various forms of validity or quality criteria.

Despite its value, conducting mixed methods research is not easy. It takes time and resources, and it requires specific skills to collect, analyse and mix both quantitative and qualitative data in one study. However, Creswell and Plano Clark (2007: 10) emphasise the fact that these issues are not insurmountable, because certain strategies to address them have been developed during the evolution of mixed methods research over the last few decades.

4. THE ORIGINS AND PHILOSOPHICAL FOUNDATION OF MIXED METHODS RESEARCH

Bergman (2008: 4) divides the "evolution" from mono method to mixed methods research into two broad stages. The first stage lasted from the late 1950s to the 1980s, and it ostensibly involved the acceptance of mixed methods in order to overcome mostly the epistemological, ontological and axiological weaknesses of qualitative and quantitative paradigms. The second stage, from the 1990s onward, includes a more integrated approach in which the distinctions between qualitative and quantitative research blur, giving rise to mixed methods research.

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However, Creswell and Plano Clark (2007: 13) give a more comprehensive description of the evolution of mixed methods research. They organise the historical evolution into the following four, often overlapping, time periods:

4.1 Formative period

The formative period began in the 1950s and continued up until the 1980s. The interest in using multiple data-collection methods in one study found momentum in the 1950s when Campbell and Fiske (1959) advocated in their classic study for the collection of multiple forms of quantitative data to study the validation of psychological traits. They designed the multitrait–multimethod matrix to rule out method effects – that is to allow one to attribute individual variation in scale scores to the personality trait itself rather than to the method used to measure it (Hanson et al. 2005: 225). Creswell and Plano Clark (2007: 15) also refer to the work of Sieber (1973) and Jick (1979) which combined both quantitative and qualitative data sources in this period.

4.2 Paradigm debate period

During the 1970s and 1980s a number of controversial issues and debates limited the widespread acceptance of mixed methods research. Two important issues, namely the "paradigm-method fit" issue and the "best paradigm" issue, have inspired considerable debate regarding the philosophical basis of mixed methods research (Hanson et al. 2005: 225).

According to Hanson et al. (2005: 225), the "paradigm-method fit" issue relates to the question: Do philosophical paradigms (e.g. postpositivism, constructivism) and research methods *have* to fit together? Some researchers have argued, for example, that a postpositivist philosophical paradigm, or worldview, could be combined only with quantitative methods, and that a naturalistic worldview could be combined only with qualitative methods. This issue has been referred to as the "paradigm debate". Teddlie and Tashakkori (2009: 15) describe the paradigm debate as the conflict between the competing scientific worldviews of positivism (and variants, such as postpositivism) and constructivism (and variants, such as interpretivism) on philosophical and methodological issues. From this perspective, mixed methods research was viewed as untenable (i.e. incommensurable or incompatible) because certain paradigms and methods could not "fit" together legitimately. Today, there are still qualitative and quantitative researchers who eschew mixed methods research because of the incompatibility of "mixing" paradigms (Creswell & Plano Clark 2007: 15). Rossman and Wilson, as cited by Creswell and Plano Clark (2007: 15), called these individuals *purists* who advocate the so-called *incompatibility thesis* (Johnson & Onwuegbuzie 2004: 14), which posits that qualitative and quantitative research paradigms, including their associated methods, cannot and should not be mixed. In reaction, mixed methodologists countered the incompatibility thesis by positing a different paradigm: pragmatism (e.g. Howe 1988; Tashakkori & Teddlie 1998). Teddlie and Tashakkori (2009: 15) postulate that a major tenet of Howe's (1988) concept of pragmatism was that qualitative and quantitative meth-

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ods are compatible (the *compatibility thesis)*, thereby rejecting the either/or choices presented by the incompatibility thesis.

The second issue which has stimulated scholarly debate during the paradigm debate period is the "best paradigm" issue. According to Hanson et al. (2005: 225), the best paradigm issue relates to the question: What philosophical paradigm is the *best* foundation for mixed methods research? Although the issue of reconciling paradigms is still apparent (Creswell & Plano Clark 2007: 15), for many mixed methods researchers pragmatism has become the answer to the question of what the best paradigm for mixed methods research is (Creswell & Plano Clark 2007: 15; Hanson et al. 2005: 226; Johnson & Onwuegbuzie 2004: 16; Tashakkori & Teddlie 2003). Teddlie and Tashakkori (2009: 7) define pragmatism as

> ... a deconstructive paradigm that debunks concepts such as "truth" and "reality" and focuses instead on "what works" as the truth regarding the research questions under investigation. Pragmatism rejects the either/or choices associated with the paradigm wars, advocates for the use of mixed methods in research, and acknowledges that the values of the researcher play a large role in interpretation of results.

From a pragmatic viewpoint a study's research question/s should thus be of primary importance – more important than either the method or the theoretical lens, or paradigm, that underlies the method (Tashakkori & Teddlie 2003; Creswell & Plano Clark 2007: 26).

However, it is worth pointing out that Teddlie and Tashakkori (2009: 99) also mention one other "best" philosophical basis of mixed methods research – the transformative paradigm. According to Creswell and Plano Clark (2007: 27), the transformative paradigm focuses on the experiences of individuals who suffer from discrimination or oppression, and involves engaging in research that addresses power differentials. Teddlie and Tashakkori (2009: 99) conclude that both pragmatism and the transformative perspective can be used as alternative worldviews associated with the use of mixed methods research, depending on the type of research being conducted. These authors' viewpoint is an endorsement of the multiple paradigm thesis, which is also the view of other scholars like Creswell and Plano Clark (2007: 27) who argue that multiple paradigms may be applied to diverse mixed methods designs, and researchers have to decide which paradigm is most appropriate given their choice of a particular mixed methods design for a particular study.

4.3 Procedural developments

Although the paradigm debate has not disappeared, it waned considerably in the mid- and late 1990s, largely because "most researchers had become bored with philosophical discussions and were more interested in getting on with the task of doing their research" (Smith 1996 as quoted by Teddlie & Tashakkori 2009: 15). Attention shifted toward the identification of classification systems of types of mixed methods design, the development of a mixed methods notation system and procedures, as well as issues like validity and inferences (Creswell & Plano Clark 2007: 14–16).

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4.4 Recent indicators of interest

The turn of the millennium has seen a growth in the interest in mixed methods research as well as authors advocating for mixed methods research as a separate design in its own right (Creswell & Plano Clark 2007: 16). Creswell (2003: 18) aligns mixed methods as a third approach alongside quantitative and qualitative approaches. Johnson and Onwuegbuzie (2004: 14) advocate for mixed methods research as the third research paradigm in educational research and Teddlie and Tashakkori (2003) call mixed methods research the third methodological movement. Most recently, Teddlie and Tashakkori (2009: 4) refer to mixed methods research as the *third research community,* because they are focusing on the relationships that exist within and among the three major groups that are currently doing research in the social and behavioural sciences.

5. MIXED METHODS RESEARCH DESIGNS

In the literature on mixed methods research, considerable attention has been directed at organising and classifying types of mixed methods design (e.g. Creswell & Plano Clark 2007; Ivankova et al. 2007; Tashakkori & Teddlie 2003; Teddlie & Tashakkori 2009). These classifications have represented diverse social and human science disciplines, including evaluation, health research and educational research, from the time the field emerged in the late 1980s. According to Onwuegbuzie and Collins (2007: 290), these typologies differ in their levels of complexity. However, most mixed methods research designs use time orientation dimension as their base. Time orientation refers to whether the qualitative and quantitative phases of the study occur at approximately the same point in time such that they are independent of each other (i.e. concurrent) or whether these two components occur one after the other such that the latter phase is dependent, to some degree, on the former (i.e. sequential).

Examining the long list of design types may be overwhelming and confusing. It is easy to get lost in the details, as these classifications are drawn from different disciplines, have emphasised different facets of mixed methods designs, and lack consistency in the names of the designs. Although the names differ for the types of design, two characteristics emerge that are common to many classifications: either the purpose of the design is to merge (or bring together) the qualitative and quantitative data in a parallel or concurrent way, or to have one type of data (qualitative or quantitative) build on or extend the other type (quantitative or qualitative) in a sequential way. These two major design options seem to hold whether the research is presented as a single study, such as is found in many postgraduate studies, or in a multiphase project, such as is found in the evaluation literature and in large-scale funded projects (Creswell, Plano Clark & Garrett 2008: 66).

However, in order to understand the different types of design, attention should first be given to a uniform notational system.

5.1 Notational system

Morse (1991a; 2003) developed the basic notational system that is still used in mixed methods research. Reminiscent of the notation system developed by Campbell and

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Stanley (1996), which used Xs and Os to represent different experimental procedures (as discussed in Chapter 10), Morse's system uses plus (+) symbols and arrows (→), as well as capital and lower-case letters. A plus sign indicates that quantitative and qualitative data are collected concurrently (at the same time), and an arrow indicates that they are collected sequentially (one followed by the other). The use of capital letters indicates higher priority for a particular method (i.e. QUAN or QUAL). Lower-case letters, in turn, indicate lower priority (i.e. quan or qual). In Morse's system, the priority of one method over the other is an important dimension that should be predetermined before data collection starts (Teddlie & Tashakkori 2009: 142). Consider the following examples of using the notation system:

- QUAN → qual. This notation indicates a quantitatively driven sequential study, where quantitative data collection is followed by qualitative data collection with unequal priority.
- QUAL + QUAN. This notation indicates a qualitatively and quantitatively driven concurrent study, where qualitative and quantitative data collection occur at the same time and are given equal priority.
- QUAN (qual). This notation indicates that the qualitative methods are embedded within a quantitative design.

From our discussion it is clear that this notation system, as described by Teddlie and Tashakkori (2009: 142), consists of three important distinctions:

- Whether a project is QUAL or QUAN oriented
- Which aspect of the design is *dominant* (designated with upper-case letters, such as QUAL) and which aspect of the design is *less dominant* (designated with lowe-case letters, such as qual)
- Whether projects are conducted simultaneously (*simultaneous* or *concurrent designs,* designated by a plus [+] sign), or sequentially (*sequential designs,* designated by the arrow [→] symbol)

5.2 Types of mixed methods research design

As noted earlier, several authors have developed typologies of mixed methods research designs. Creswell and Plano Clark (2007: 60–62), as well as Teddlie and Tashakkori (2009: 160–162), have recently summarised the range of these classifications. Creswell and Plano Clark (2007: 59) conclude that although authors have emphasised different features and used different names, there are actually more similarities than differences among these classifications. Based on these similarities, they have created a more "parsimonious and functional classification". Their new typology or classification includes four major types of mixed methods design, namely the exploratory design, the explanatory design, the triangulation design and the embedded design.

In the following sections we will provide a broad overview of these major designs, based on Creswell and Plano Clark's (2007: 62–79) as well as Ivankova et al. (2007: 264–270) description thereof.

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5.2.1 Exploratory mixed methods design

The exploratory mixed methods design is used when a researcher first needs to explore a phenomenon using qualitative data before attempting to measure or test it quantitatively. As a two-phase design, the results of the first phase (qualitative data) can help develop or inform the second phase (quantitative data). This design is therefore particularly useful when a researcher needs to develop and test an instrument because one is not available, when variables are unknown, when there is no guiding theoretical framework, or when a researcher wants to explore a phenomenon in depth and then measure its prevalence (Creswell & Plano Clark 2007: 75). As the name suggests, this design implies that the researcher first *explores* a phenomenon by identifying qualitative themes, and then uses that information to guide a subsequent quantitative examination of the initial qualitative results, such as developing a measurement instrument based on the qualitative results (Ivankova et al. 2007: 265). Notice in Figure 26.1 the sequential flow of the qualitative and quantitative phases, as well as the fact that priority is unequal and given to the qualitative data. A practical example of this design is when a researcher first explores the life skills needed by HIV and Aids orphans by conducting semi-structured interviews with orphans and caregivers. Based on that qualitative information, the researcher then develops a life skills programme and a measuring instrument to test its effectiveness.

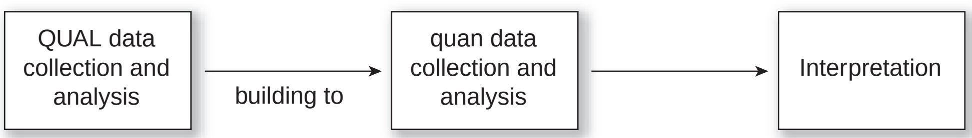

Figure 26.1 Exploratory mixed methods design

Source: Adapted from Creswell & Plano Clark (2007: 76)

Owing to its two-phase structure and the fact that only one set of data is collected at a time, this design is straightforward to describe, implement and report. However, this implies the disadvantage that the design requires a considerable amount of time to implement.

5.2.2 Explanatory mixed methods design

The explanatory design is also a two-phase mixed methods design. This design starts with the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The overall purpose of this design is that the qualitative data help explain or build upon initial quantitative results from the first phase of the study (Creswell & Plano Clark 2007: 71). Priority is unequal and given to quantitative data. Figure 26.2 shows diagrammatically the sequential flow of the quantitative and qualitative phases, as well as the fact that priority is unequal and given to the quantitative data.

The advantages of this design are the fact that its two-phase nature makes it uncomplicated to implement and to report on. The researcher conducts the two methods in separate phases and collects only one type of data at a time. The final

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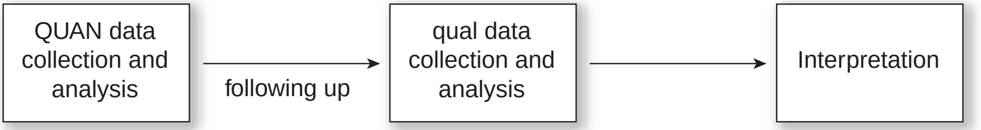

Figure 26.2 Explanatory mixed methods design

Source: Adapted from Creswell & Plano Clark (2007: 73)

report can also be written in two phases. The most important challenge, however, is that this two-phase design is very time consuming.

5.2.3 Triangulation mixed methods design

The triangulation design is the most well known and popular of the four mixed methods designs (Ivankova et al. 2007: 266). This is a one-phase design in which the researcher uses both quantitative and qualitative methods during the same time frame and with equal weight to best understand the phenomenon of interest. It generally involves the concurrent, but separate, collection and analysis of quantitative and qualitative data in order to compare and contrast the different findings to see the extent to which they do or do not agree with each other. This will enable the researcher to produce more complete and well-validated conclusions. Notice the concurrent collection and analysis as well as the equal weight of both quantitative and qualitative methods in the visual diagram of this design shown in Figure 26.3. An example of this design is when a researcher simultaneously conducts a survey and semi-structured interviews with the same respondents regarding, for example, their perceptions of abortion.

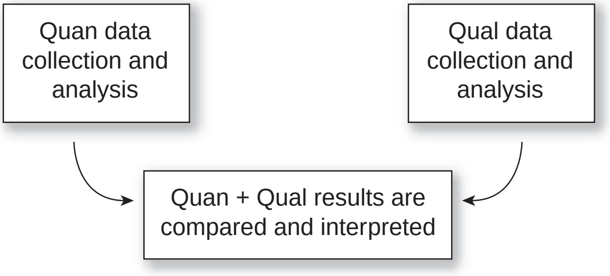

Figure 26.3 Triangulation mixed methods design

Source: Adapted from Creswell & Plano Clark (2007: 73)

Ivankova et al. (2007: 266) note appropriately that the name *triangulation* comes from the same term used in surveying and in ship navigation when multiple measurements are used to provide the best estimate of the location at a specific point (like the point at the top of a triangle). They also warn against the fact that triangulation in mixed methods research is sometimes confused with the process of triangulation or crystallisation that is often used in developing a theme in qualitative research.

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The advantage of using the triangulation design is that it takes less time to complete than a sequential design. Each type of data can also be collected and analysed separately and independently, using the techniques traditionally associated with quantitative and qualitative research. This lends itself to team research, in which the team can include experts from both traditional approaches (Creswell & Plano Clark 2007: 66). However, there are also challenges associated with the design. First, much effort and expertise are required to collect and analyse two complete but separate sets of data concurrently. Second, researchers may face the challenge of what to do if the quantitative and qualitative results do not agree. These differences can be difficult to resolve and may require the collection of additional data.

5.2.4 Embedded mixed methods design

The fourth major mixed methods design is the embedded design. In this design one data set provides a supportive, secondary role in a study based primarily on the other data type. The premises of this design are that a single dataset is not sufficient, that different questions need to be answered, and that each type of question requires different types of data (Creswell & Plano Clark 2007: 67). This design is particularly useful when, for instance, a researcher needs to embed qualitative data within a dominant quantitative experimental design by collecting qualitative data, through interviews with the respondents, in order to follow up on the results of the experiment. In the same way quantitative data could be embedded within a qualitative phenomenological design to help describe the broader context of a qualitative study. The embedded nature of the secondary set of data is visually displayed in Figure 26.4.

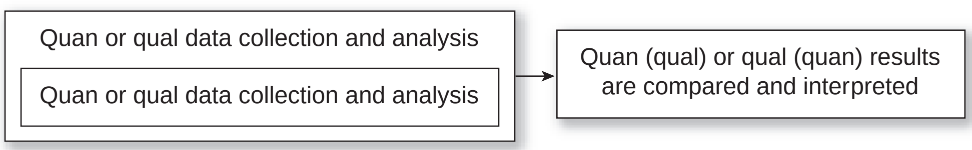

Figure 26.4 Embedded mixed methods design
Source: Adapted from Creswell & Plano Clark (2007: 73)

The most important advantage of the embedded design is that the researcher is basing the study on a well-known and established design (e.g. an experiment or a phenomenological design) as well as the fact that the two types of data can be collected concurrently (Ivankova et al. 2007: 268). The challenge is that the researcher must specify the purpose of collecting a second dataset as part of a larger study.

5.3 Criteria for selecting a type of mixed methods design

It is strongly recommended that a researcher carefully selects a single mixed method design that best matches the research problem and research objectives of a study. Creswell and Plano Clark (2007: 79–84) identify the following key factors that researchers should consider when choosing a mixed methods design for their studies:

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- An important consideration is that the design should match the research problem that a researcher wants to study.
- Researchers should evaluate their own expertise and consider the quantitative and qualitative skills that they possess. If they lack expertise in certain methods, they should consider working in a team.
- Consideration must also be given to the available resources, such as the time available to complete the study and the available funding resources.
- The expectations of the audience for the research can also influence the design choice, particularly if the audience values one type of evidence over the other type.
- The choice of a research design relates especially to three decisions:
  (a) The *timing* or "sequence" of the use of collected data. Timing within a mixed methods design is classified as either concurrent or sequential. Concurrent timing occurs when the researcher implements both quantitative and qualitative methods during a single phase of a study at the same time. Sequential timing occurs when the researcher implements the methods in two distinct phases, using (collecting and analysing) one type of data before using the other type.
  (b) The relative *weight* of the quantitative and qualitative approaches. Weighing refers to the relative importance or priority of the quantitative and qualitative methods to answer the study's questions. There are two possible weighting options for a mixed methods design, namely to give equal weight to both quantitative and qualitative methods so that both play an equally important role in addressing the research problem, or unequally where one method will have a greater emphasis within the study than the other one.
  (c) The approach to *mixing* the two datasets (i.e. how the quantitative and qualitative datasets will be merged, embedded or connected).

6. MIXED METHODS RESEARCH PROCESS

In Chapter 4 we explicitly stated that irrespective of what we want to learn, or what we want to discover, or which facts we want to acquire, there is a process involved – a systematic process of scientific inquiry, or a standard sequence of steps to increase our understanding of the world around us. However, it is important to remember that, irrespective of which research approach is involved, the steps in the process are not necessarily linear or unidirectional; they involve a cyclical, recursive and interactional process.

Scanning the mixed methods research literature, we realised that different authors give different descriptions of the mixed methods research process (i.e. Creswell & Plano Clark 2007: 3; Ivankova et al. 2007: 274; Johnson & Onwuegbuzie 2004: 21; Teddlie & Tashakkori 2009: 110). For the purpose of our discussion we have integrated primarily the views of Creswell and Plano Clark (2007), Ivankova et al. (2007), and Teddlie and Tashakkori (2009). However, before describing the steps according to the views of these authors, it is important to note that, except for a few nuance differences, the mixed methods research process correlates with the research process model as displayed in Table 4.4 and discussed in Chapter 4 of this

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book. The first five steps common to qualitative and quantitative processes are also common to the mixed methods research process. The follow-up steps as described in phases 3, 4 and 5 of the research process model are also applicable to the mixed methods research process, although within the unique framework of combining quantitative and qualitative elements. The uniqueness of the mixed methods research process becomes clearer in the description of the process as described by the above-mentioned authors. In broad terms the steps in the process, according to these authors, are as follows:

STEP 1: GENERATE OBJECTIVES AND RESEARCH QUESTIONS AND DETERMINE WHETHER MIXED METHODS RESEARCH IS THE BEST APPROACH FOR ADDRESSING THE RESEARCH PROBLEM

According to Teddlie and Tashakkori (2009: 126), research objectives are important in mixed methods research because they help blend the two traditional approaches (qualitative and quantitative research) from the outset of the research and they provide a platform on which qualitative and quantitative research questions may be synthesised into coherent and integrated themes. The researcher should therefore formulate clear and specific objectives that may guide the study.

Regarding research questions, Teddlie and Tashakkori (2009: 129) emphasise that researchers should remember that mixed methods research questions are concerned with unknown aspects of a phenomenon and are answered with information that is presented in both narrative and numerical forms. Mixed methods research studies therefore require at least two research questions (one qualitative and one quantitative), whereas traditional qualitative and quantitative studies could be initiated with only one. Creswell and Plano Clark (2007: 105) recommend that, because both quantitative and qualitative data collection are part of mixed methods studies, a specific question or questions related to the mixing of the data can be useful. For this they recommended two approaches: (1) formulate a single question that is overarching in nature and incorporates both the quantitative and qualitative sub-questions; or (2) formulate separate quantitative and qualitative questions, followed by a question regarding the nature of integration.

Based on the objectives and research questions, the researcher should then ask: Are both forms of data necessary to best understand the research problem? Would the collection of only one form of data (e.g. quantitative data) limit my understanding of the research problem, or will it not be comprehensive enough? These types of question are important for determining whether mixed methods research is the most appropriate approach for a specific study.

STEP 2: IDENTIFY AND FORMULATE A RATIONALE FOR APPLYING A MIXED METHODS APPROACH

After the researcher has determined that a mixed methods research approach will be the best approach for a specific study, the reasons why or rationale for using mixed methods research should be clearly described (Ivankova et al. 2007: 274–275). According to Johnson and Onwuegbuzie (2004: 22), there are five major rationales for conducting mixed methods research: (a) *triangulation* (i.e. seeking convergence and corroboration of results from different methods and

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SECTION E

designs studying the same phenomenon); (b) *complementarity* (i.e. seeking elaboration, enhancement, illustration and clarification of the results from one method with results from the other method); (c) *initiation* (i.e. discovering paradoxes and contradictions that lead to a reframing of the research question); (d) *development* (i.e. using the findings from one method to help inform the other); and (e) *expansion* (i.e. seeking to expand the breadth and range of research by using different methods for different inquiry components).

STEP 3: SELECT A MIXED METHODS DESIGN

The researcher should now select the most appropriate mixed methods research design (exploratory, explanatory, triangulation or embedded design). When choosing the design, the purpose of the study, the researcher's expertise, the available resources, the audience's expectations, the timing of the quantitative and qualitative data collection and analysis, and the weight of the quantitative and qualitative approaches as well as the approach to mixing the two datasets must be considered (Creswell & Plano Clark 2007: 79).

Teddlie and Tashakkori (2009: 164), however, point out that in some cases it is necessary to develop a new mixed methods design, using flexibility and creativity, because no one best design exists for a research project, either when it starts or as it evolves.

STEP 4: SELECT A MIXED METHODS SAMPLING STRATEGY

Based on the fact that there is no widely accepted typology of mixed methods sampling strategies (Teddlie & Tashakkori 2009: 185), mixed methods sampling involves combining well-established qualitative and quantitative techniques in creative ways to answer the research questions posed by the mixed methods research design. In selecting a sampling strategy the researcher should consider the following guidelines, as formulated by Teddlie and Tashakkori (2009: 192–193):

- The sampling strategy should stem logically from the research questions and hypotheses being addressed by the study.
- It should generate thorough qualitative and quantitative databases on the research questions under study.
- It should allow the researcher to draw clear inferences from both the quantitative and qualitative data.
- It must be ethical.
- It should be feasible and efficient.
- It should allow the research team to transfer or generalise the conclusions of their study to other individuals, groups and contexts.
- It should be described in enough detail so that other investigators can understand it and perhaps use it in future studies.

STEP 5: COLLECT THE DATA

As part of this step the researcher should conduct a pilot study before collecting the data for the main study. According to Teddlie and Tashakkori (2009: 203), a pilot study is the stage of a project in which the researcher collects a small amount of

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data to "test drive" the research procedures, identify possible problems in the data collection protocols and set the stage for the actual study. How the researcher will conduct the pilot study (and who participates in it) depends on the research design, the sampling frame and the study's context.

Researchers need to consider the types of quantitative and qualitative data that they will collect. In qualitative research, the types of data might be categorised in terms of their sources: as open-ended interviews and survey responses, observations, documents and audiovisual materials. In quantitative research, investigators collect data using closed-ended surveys, measurement instruments, structured interview and observation schedules, checklists, and census or attendance records. The option that will best answer the research question or hypothesis should be chosen.

STEP 6: ANALYSE THE DATA

Data analysis in mixed methods research consists of analysing the quantitative data using quantitative methods, and the qualitative data using qualitative methods and procedures. It involves the processes whereby quantitative and qualitative data analysis strategies are combined, connected or integrated in research studies. Teddlie and Tashakkori (2009: 263) refer to several authors who have classified different mixed methods data analysis strategies (e.g. Caracelli & Greene 1993; Creswell & Plano Clark 2007; Greene 2007; Onwuegbuzie & Teddlie 2003; Tashakkori & Teddlie 1998).

Johnson and Onwuegbuzie (2004: 22) describe in a nutshell seven data analysis stages that a researcher should follow in analysing mixed methods data, namely: (a) *data reduction*, which involves reducing the dimensionality of the qualitative data (e.g. via exploratory thematic analysis, memoing) and quantitative data (e.g. via descriptive statistics, exploratory factor analysis, cluster analysis); (b) *data display*, which involves describing pictorially the qualitative data (e.g. matrices, charts, graphs, networks, lists and rubrics) and quantitative data (e.g. tables, graphs); (c) *data transformation*, where quantitative data are converted into narrative data that can be analysed qualitatively, and qualitative data are converted into numerical codes that can be represented statistically; (d) *data correlation*, which involves the quantitative data being *data integration* correlated with the qualitised data, or the qualitative data being correlated with the quantitised data; (e) *data consolidation*, wherein both quantitative and qualitative data are combined to create new or consolidated variables or datasets; (f) *data comparison*, which involves comparing data from the qualitative and quantitative data sources; and (g) *data integration*, whereby both the quantitative and qualitative data are integrated into either a coherent whole or two separate sets (i.e. qualitative and quantitative) of coherent wholes.

STEP 7: MAKING INFERENCES

Making inferences is the last and one of the most important steps in the process of mixed methods research: answering the research question by making interpretations. In other words, inferences are conclusions and interpretations that are made on the basis of collected data in a study. Tashakkori and Teddlie (2008: 104) describe the meaning of inferences as follows:

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SECTION **E**

> Inferences are a researcher's construction of the relationship among people, events, and variables, as well as his or her construction of respondents' perceptions, behaviours, and feelings and how these relate to each other in a coherent and systematic manner ... Inferences are not only answers to research questions; they go beyond such answers by developing new understandings and new explanations for events, phenomena, and relationships. They create an understanding (e.g. "Gestalt" or whole) on the basis of all results, a whole that is bigger than a simple collection of the miscellaneous findings from a study.

Researchers use the term *inference* to denote both a process and an outcome. As a process, making inferences consists of a series of steps that the researcher should follow in order to create meaning out of a relatively large amount of collected data. As an outcome, inference is a conclusion made on the basis of obtained data. Such a conclusion may or may not be acceptable to other scholars, and is subject to evaluation by the community of scholars and/or consumers of research (Tashakkori & Teddlie 2008: 104). This implies that the researcher should thus, as part of this step, also evaluate the quality of conclusions. Some authors refer to this aspect as the validation or validity of procedures (Creswell & Plano Clark 2007: 146) or the legitimation of data and interpretations (Johnson & Onwuegbuzie 2004: 22). We agree with Tashakkori and Teddlie (2008: 103) who suggested the term *inference quality*.

SUMMARY

This chapter initially focuses on the meaning of the concept *mixed methods research* as well as the rationales for mixing qualitative and quantitative methods in a single study. Thereafter a brief discussion is offered regarding the origins and philosophical foundation of mixed methods research.

Four mixed methods research designs are discussed namely exploratory, explanatory, triangulation and embedded design. The chapter concludes with a brief description of the different steps in the mixed methods research process.

Self-evaluation and group discussion

Your lecturer's assignment is that you should undertake a mixed methods research project. Explain the following to your tutor or study group:

- What your topic is
- What your rationale for choosing a mixed methods approach is
- What the most appropriate mixed methods design for your study will be
- What steps you will follow to conduct the research project

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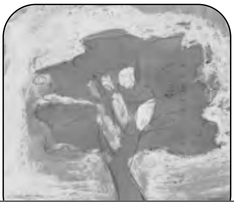

27

CB FOUCHÉ

Evaluation research

Learning objectives

Studying this chapter should enable the reader to

- understand the development of evaluation research
- articulate the different conceptual levels of evaluation research
- become acquainted with the purposes and types of evaluation research
- articulate how the types of evaluation are linked to the programme life cycle
- identify appropriate research designs and methods in evaluation research
- understand the integrated process of evaluation.

1. INTRODUCTION

The relationship between social research and practice was addressed in earlier chapters in this book and in particular in Chapter 3. The point has been made that there have been many attempts over the last four or five decades to strengthen the scientific basis of the professional practice of the caring professions. These attempts included efforts to design robust practice initiatives and processes as well as procedures to evaluate practice. Evaluation is not a concept foreign to professions tasked with social service delivery. The effectiveness of programmes and services or practice interventions has become increasingly important for human service professionals over the last decade. In an age of accountability, managers, funders and even clients demand that some evidence is provided in terms of “what works”, “how it works” or “how it can be made to work better”.

The “mainstream” of evaluation research in the caring professions consists of programme evaluation. It is worth noting that evaluation research links very closely with other research approaches discussed elsewhere in this book, namely single system design (as discussed in detail in Chapter 11 as one of the quantitative research designs) and intervention research (discussed in more detail in Chapter 28 of this book). Programme evaluation will be the main focus of this chapter.

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As in all types of evaluation research (to be discussed later in this chapter), single systems design is aimed at evaluating the effectiveness or impact of treatment interventions (Monette, Sullivan & DeJong 2005: 289). As the single subject in single system designs can be an individual, a family, a group, an organisation, a community or any client system (Yegidis & Weinbach 1996: 234), the single system design is a very effective approach for making inferences about treatment effectiveness for almost any client group participating in a range of programmes or services by having the chosen client serve as a representative of both the treatment and the control group for the given intervention. According to these authors, single system designs can be regarded as an evaluation of individual practice effectiveness.

The one most noteworthy difference between single system designs and most other forms of evaluations research, however, is that they are very context specific and mostly conducted in the role of practitioner. Single system designs aim to evaluate whether a specific intervention with a particular client or client system seems to be effective in changing an identified variable. This is most often done by the practitioner in collaboration with the client. In other forms of evaluation research, it is expected that the evaluation will be conducted by an outsider – an "evaluator" – or at the very least, if conducted internally, that the person "switches hats", leaving the role of practitioner behind – to conduct an evaluation as objectively as possible (Weinbach 2005: 53). In fact, according to Gibbs (2001), agency-based research agendas are often situated in research offices separate from practitioners and the coalface of practice. As mentioned, a detailed discussion of single system design as a form of evaluation research can be found in Chapter 11 and will not be further addressed here.

Rothman and Thomas (1994: 37), when discussing the evaluation and advanced development stage of their intervention design and development model, mentioned before and described in Chapter 28 of this book, state that intervention research is distinguished from pure activism by its use of research methods to examine how and why a change programme does or does not work. Using pilot tests and field replications to test and refine the intervention sets intervention research apart from, as they put it, "mere" programme evaluation.

In our opinion, however, the crucial characteristic that distinguishes intervention research from other types of evaluation research – and in particular "mere" programme evaluation – is not so much the use of pilot tests and field replications, as these may be executed as part of any normal programme evaluation, for example as a routine pilot study when doing an impact evaluation. What really distinguishes intervention research from other types of evaluation research is, to our minds, that when intervention research is attempted, something new is created and then evaluated. In other words, it is a new technology or intervention, an innovation, while most types of evaluation research *assume the prior existence* of a service, programme or intervention designed and developed by someone else, perhaps long before the evaluator ever entered the field. In short, when we are asked, or feel compelled, to design and develop (and eventually evaluate) a new intervention, we are conducting intervention research; alternatively, when we are asked, or feel compelled, to evaluate an existing programme or service, we enter the field of evaluation research. In its purest sense, there is a level of overlap between the first phases of intervention research and some types of formative evaluation research. As will be

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discussed below, some types of formative evaluation are aimed at gathering information for the design or formation of a programme, such as a needs assessment. This may create the platform from which "something new" – as in an innovation – may be developed. So, clearly, there are no absolute boundaries between the different types of evaluation research, but the purpose for which the research activity is undertaken will influence the researcher's decision about the most appropriate approach.

A brief overview of the development of evaluation research will be followed by a discussion on four different conceptual levels of this research. The different types of programme evaluation will then be discussed in more detail.

2. A BRIEF HISTORY OF EVALUATION RESEARCH

Although the historical roots of programme evaluation, Rossi, Lipsey and Freeman (2004: 8) write, extend back to the 17th century, widespread systematic evaluation research is a relatively modern 20th-century development in the US. It traces its modern beginnings to the educational testing work of Thorndike and colleagues in the early 1900s (Patton 2002: 147). Prior to World War I, the most significant efforts were directed at assessing literacy and occupational training programmes and public health initiatives to reduce mortality and morbidity from infectious diseases.

By the 1930s, social scientists were using rigorous social research methods to assess social programmes in a variety of areas. The famous Western Electric experiments on worker productivity that contributed the term *Hawthorne effect* to social science literature date from this time as well. From such beginnings, Rossi et al. (2004: 8) continue, applied social research grew at an accelerating pace, with a strong boost provided by its contributions during World War II. Stouffer and his associates worked with the US army to develop procedures for monitoring soldier morale. The period immediately following World War II saw the beginning of large-scale programmes designed to meet needs for urban development and housing, technological and cultural education, occupational training and preventive health care.

By the end of the 1950s, programme evaluation was commonplace in the US and elsewhere. During the 1960s the number of articles and books on the practice of evaluation research grew dramatically (Rossi et al. 2004: 9). Suchman's (1967) review of evaluation research methods, one of the seminal books and also well known in South Africa, and Campbell's (1966) call for social experimentation are two illustrations. In the early 1970s, evaluation research emerged as a distinct speciality field in the social sciences. The first journal in evaluation, *Evaluation review*, was launched in 1976 by SAGE Publications. Other journals followed in rapid succession, and today there are at least a dozen devoted primarily to evaluation. By 1980, Cronbach and his associates were able to state that "evaluation has become the liveliest frontier of American social science" (Rossi et al. 2004: 12–13).

Over the last 25 years, there has been a strong global push for formalised evaluation of public as well as private investments, processes, practices and programmes. According to Weinbach (2005: 21), there is no single impetus for this push; it is more a result of a combination of overlapping and mutually supportive develop-

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ments during the 20th century, including political events, social work critics and ongoing efficiency concerns. Since the late 1990s, high-quality evidence has increasingly underpinned decisions around expenditure priorities with evaluation often commissioned during a budget process and linked to the funding of new policies and programmes (Lunt, Davidson & McKegg 2003). Key drivers for evaluation research currently seem to focus on value for money, scarce resource allocation, accountability and improved service delivery.

3. DEFINING EVALUATION RESEARCH

The term *evaluation research* is somewhat misleading in that there is no separate set of research techniques that is distinctly applied for this single purpose (Monette et al. 2008: 315). Evaluation research is defined by Weinbach (2005: 2) as " ... the systematic use of research methods to make judgments about the effectiveness and the overall merit, worth, or value of some form of ... practice". Although there is widespread consensus about the elements of this definition, there is considerable variety in the terms people use when talking about aspects of evaluation. Many authors use the terms to be discussed below interchangeably – and add to the confusion and frustration of many scholars in this field. Duignan in Lunt et al. (2003: 78) outlines four conceptual levels of evaluation terminology that are extremely useful in avoiding confusion, namely evaluation approaches, evaluation purposes, evaluation designs and evaluation methods. These have been adapted for our discussion below.

Evaluation approaches can be regarded as the overall way of conceptualising evaluation, including philosophical and value orientations to the task. Evaluation purposes refer to the intended use of the evaluation activity, namely gathering information for improving the design, development, formation and implementation of a programme (formative evaluation); describing the process of a programme as it is being developed (process evaluation); or assessing the impact, outcome or worth of a programme (summative evaluation). Not unlike any other research approach, evaluation designs refer to the way in which the ingredients are put together in an attempt to answer the evaluation questions – similar to any other research approach – while evaluation methods are the specific research methods or techniques used in practice to conduct an evaluation. These different conceptual levels of evaluation will each be discussed in turn below in more detail.

4. EVALUATION APPROACHES

Evaluation approaches can be regarded as the overall way of conceptualising evaluation, including philosophical and value orientations to the task. One might come across terms such as utilisation-focused evaluation, empowerment evaluation, stakeholder evaluation, theory-based evaluation, positivist evaluation and strategic evaluation, or a range of politically correct or culturally appropriate terms linked to "evaluation". These are discussed in various publications, and the reader may come across extensive discussions of some of them. It may all be very daunting to the novice researcher – as if advanced knowledge is required to understand these "specialised" forms of evaluation similar to and different from each other. However, all

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of these terms merely refer to a particular philosophical or value stance in undertaking the evaluation, and a whole list of terms may be used as appropriate – often driven by various external agendas. Any evaluation approach can incorporate different purposes of evaluation – as will be discussed below.

5. EVALUATION PURPOSES

5.1 The threefold purpose of evaluation

Another layer of terminology refers to the intended use of the evaluation activity. The purpose of an evaluation can be threefold, aimed at gathering information for improving the design, development, formation and implementation of a programme (formative evaluation); describing the process of a programme as it is being developed (process evaluation); or assessing the impact, outcome or worth of a programme (summative evaluation) (Duignan in Lunt et al. 2003).

Programme evaluation was originally focused on measuring attainment of goals and objectives; that is, finding out if a programme "works" or in other words, if it is effective. This came to be called summative evaluation, which originally relied heavily on experimental designs and the quantitative measurement of outcomes. In recent years, programme improvement (formative) evaluation has become at least as important and pervasive as summative evaluation (Patton 2002: 147). Rossi et al. (2004: 16) define programme evaluation as the use of social research methods to systematically investigate the effectiveness of social intervention programmes in ways that are adapted to their political and organisational environments and are designed to inform social action to improve social conditions.

As was suggested above, viewing evaluations in terms of formative or summative has been part and parcel of conceptualisation in the field of programme evaluation since its inception. Most authors regard formative evaluations as activities directed at improving a programme's design, planning development and implementation (Monette et al. 2008; Weinbach 2005; Yegidis & Weinbach 2006). The term designates the meaning: this kind of evaluation "forms" the programme, that is it helps to improve it at those points where the programme does not seem to meet the criteria originally set by its initiator/s. Patton (2002: 42) notes that the very presence of the researcher, asking questions or, as in the case of formative programme evaluation, providing feedback, can be an intervention that reduces the natural unfolding of events.

Weinbach (2005: 158) does acknowledge that the distinction between formative evaluations and programme monitoring (sometimes regarded as synonymous with process evaluations) gets blurred at times. There is also some disagreement as to whether a formative evaluation and a process evaluation are indeed different or whether they are only different labels for the same type of research (like outcome evaluations and summative evaluations). Some authors, however, attempt a finer distinction between formative evaluation and process evaluation (Duignan in Lunt et al. 2003; Kreuger & Neuman 2006) by defining formative evaluation as the activities aimed at ensuring a programme is well constructed as opposed to process evaluation aimed at describing what actually happened in the context or course of a programme. In our opinion, this is a more precise view of the purposes of evaluation

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and we will use this classification to discuss the different evaluation activities. However, it is acknowledged that a certain amount of overlap between process evaluations, programme monitoring and formative evaluations is inevitable, given the shared primary purpose of programme improvement.

In our opinion, there are two activities in formative evaluations, namely needs assessments and evaluability assessments. A needs assessment is summative in that the evaluator wishes to determine whether an envisaged programme should be initiated at all. If the outcome of the needs assessment points to a lack of interest or need, funds available can be used in good time in an area where a need does exist. Evaluability assessments are usually formative in that a programme meeting a need or needs would not be discontinued simply because it was difficult to evaluate. However, as will become clear in the discussion below, some authors classify evaluability assessments differently, although we will discuss them as formative as this is ideally where they should be located. Using expert advice, some form of evaluability can usually be built into an existing programme.

Process evaluation, then, assesses problems in implementation and performance, and incorporates programme monitoring. If serious doubts have arisen about the programme's overall effectiveness and utility, a summative evaluation is called for. This term is used when the overall purpose of the evaluation is to determine whether a programme should continue or not (Yegidis & Weinbach 2006) and the results are often intended for policy-making decisions (Monette et al. 2008). Summative evaluation is aimed at measuring outcomes. Impact or outcome evaluation is summative in that the results of an outcome evaluation may point to the futility of a programme and thus to its demise, or to its success and therefore to its continuation. Utilisation evaluations are usually included as a summative evaluation.

As such, it is clear that each evaluation purpose is supported by a range of evaluation activities or so-called types or models, classified in different ways by a range of authors. This includes needs assessments, evaluability assessments, programme monitoring, impact/outcome evaluations and utilisation evaluations (Monette et al. 2008; Weinbach 2005; Kreuger & Neuman 2006; Yegidis & Weinbach 2006).

5.2 Evaluation linked to an intervention or programme life cycle

As was indicated in the first chapters of this book, all research is about answering questions and evaluation research is no exception. Rossi et al. (2004) state that a critical phase in evaluation planning is the identification and formulation of the questions the evaluation will address. Good evaluation questions must be reasonable and appropriate, and they must be answerable. Evaluation questions involve performance criteria by which the identified dimensions of programme performance can be judged. To ensure that the matters of greatest significance are covered in the evaluation design, the evaluation questions are best formulated through interaction and negotiation with the evaluation sponsors and other stakeholders representative of significant groups or distinctly positioned in relation to programme decision making.

As the reader might have gathered from the discussion so far, the different types of programme evaluation present across the programme life cycle. This may happen intentionally over a predetermined period of time, or over a number of years at dif-

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ferent times in the life of a programme and by different evaluators – independent from previous evaluation efforts – as indicated in Figure 27.1.

Thus the logic of programme evaluation builds upward from careful description of the social problem the programme is expected to ameliorate (needs assessment), through decisions as to whether the programme has the necessary preconditions to allow it to be evaluated, or to what extent this must be incorporated in the design of the programme (evaluability assessment) in the beginning phases of a programme. During the middle phases of the programme life cycle, the focus changes to what was done in the implementation of the intervention, service or programme, the problems that arose and the solutions that were adopted (programme monitoring), while the end phase comprises decisions about the programme's effectiveness (impact and outcome evaluation), efficiency (efficiency assessments) and use (utilisation assessments). Each of these types of assessment will now be discussed in turn.

Purpose of evaluation	**Formative** (Information for forming or improving)	**Process** (Information for describing and delivery)	**Summative** (Information for measuring outcomes)
Type of evaluation	Needs assessments	Monitoring	Impact/outcome assessments
	Evaluability assessment	Monitoring	Efficiency assessments
			Utilisation assessments
Life cycle	**Beginning** ⟶	**Middle** ⟶	**End**

Figure 27.1 Evaluation through the life cycle of an intervention

6. FORMATIVE EVALUATION

6.1 Needs assessment

According to Monette et al. (2008), a needs assessment refers to the collection of data to determine how many people in a particular community (geographical or otherwise) need a particular service and assessing what level of services or resources already exists to fill the need. Kreuger and Neuman (2006) refer to this as "gap effectiveness". In the broadest sense, the purpose of a needs assessment is to determine by objective methods if a programme that is being considered is really needed or if an existing programme is still needed (Yegidis & Weinbach 2006). With regard to the need for a proposed programme, Weinbach (2005) warns, however, that the observations and judgements of the professionals who proposed it can usually be confirmed relatively easily. However, once the need for a programme has been established, the real issue is to learn how it should be designed to maximise its potential for success. A good needs assessment is crucial to this end. Similarly,

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needs assessments can inject objectivity into decisions about the future of an existing programme.

According to Weinbach (2005), needs assessments of existing programmes are most likely to occur when changes have occurred from the original design or planning of a programme that impacted on the need or its effectiveness These changes can include changes in

- the community
- the "competition"
- the understanding of the problem
- available technology
- funding
- mandates.

Kreuger and Neuman (2006: 425) cite Bradshaw (1972) on four different ways to ascertain need. A *felt* need involves the traditional notion of ascertaining need by examining actual people/clients/client groups. A *normative* need refers to a circumstance, situation or condition that is identified by an expert who has been able to determine a gap in existing services related to a sub-population's need. A programme may be proposed (or the effectiveness of an existing programme queried) to address the gap. The demand for an intervention or service by actual clients or those who have received services or are awaiting the service, refers to an *expressed* need. A *comparative* need refers to the estimation of those in the larger population that are likely to share the same characteristics of those already benefiting from a service or intervention.

6.2 Formative evaluation: evaluability assessment

Rossi et al. (2004: 136) write that one of the earliest systematic attempts to describe and assess aspects of programmes that can be evaluated in their own right (cf. Rossi et al. 2004: 166) arose from the experiences of an evaluation research group in the 1970s. They often found it difficult, sometimes impossible, to undertake evaluations of public programmes and began to analyse the obstacles. This led to the view that a qualitative assessment of whether minimal preconditions for evaluation were met should precede most evaluation efforts. Wholey (1979) and his colleagues termed the process *evaluability assessment*.

According to Kreuger and Neuman (2006: 395), evaluability assessment is a set of procedures for determining readiness for evaluation – whether evaluation is possible and likely to offer helpful information. Rossi et al. (2004: 168) define evaluability assessment as:

> Negotiation and investigation undertaken jointly by the evaluator, the evaluation sponsor, and possible other stakeholders to determine whether a programme meets the preconditions for evaluation and, if so, how the evaluation should be designed to ensure maximum utility.

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These definitions imply that a service or programme should meet certain preconditions before an evaluation can be conducted. The evaluability assessment attempts

to determine whether a programme does indeed meet such preconditions. If the assessment shows positive results in this regard, the evaluation can be designed. Such evaluability assessment is essentially a process of negotation and investigation undertaken jointly by the people involved.

These preconditions are contained in the following questions that Rossi et al. (2004: 157–159) suggest evaluators ask as part of the evaluability assessment:

- Are the programme goals and objectives well defined?
- Are the programme goals and objectives feasible?
- Is the change process presumed in the design of the programme plausible?
- Are the procedures for identifying members of the target population, delivering service to them, and sustaining that service through completion well defined and sufficient?
- Are the constituent components, activities and functions of the programme well defined and sufficient?
- Are the resources allocated to the programme and its various activities adequate?

On a general level, an evaluability assessment determines whether an intervention, service or programme can in fact be evaluated. Making this decision, however, is not a matter of "yes" or "no". Often an evaluability assessment will indicate certain areas that interfere both with the delivery of services and with a possible future programme evaluation. As may be clear to readers at this point, assessment of evaluability can sensibly be undertaken at the end of a programme cycle – that is, that the product of various assessments results in a decision that the programme could not be evaluated, or that only certain parts could have been evaluated or even that the programme was not amenable to evaluation at all. Although this is not the most common phase in the life cycle for an evaluability assessment to take place, it can, and does, happen – often unplanned. As such, some authors (see Monette et al. 2008) classify evaluability assessment as a summative evaluation. Similarly, an evaluability assessment can also be done as a process evaluation, according to Weinbach (2005). This author states that during process evaluations, it can be discovered that a programme, service or intervention cannot be evaluated as intended. Trying to learn what is missing or inadequate leads to an evaluability assessment. The most common problem that an evaluability assessment may identify is a lack of clearly articulated goals and objectives (Weinbach 2005).

7. PROCESS EVALUATION: PROGRAMME MONITORING

Monitoring the performance of a programme, according to Kreuger and Neuman (2006), provides feedback on how a programme or series of interventions is operating and to what extent intended objectives are being attained. All programme monitoring activities share one goal – programme improvement (Weinbach 2005). This feedback allows for early identification of problems in delivery and subsequent improvements. As such, programme monitoring is an ongoing activity, and responses to this assessment allow problems to be addressed as they are identified. Actions

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related from this can ensure that a successful programme is maintained, timely modifications made, or unworkable or unsuccessful programmes scrapped.

According to Rossi et al. (2004: 170–179), ascertaining how well a programme is operating is an important and useful form of evaluation, known as process evaluation or implementation evaluation. When process evaluation involves an ongoing effort to measure and record information about the programme's operation, programme monitoring is involved. Rossi et al. (2004: 171) define these processes as "... the systematic and continual documentation of key aspects of program performance that assesses whether the program is operating as intended or according to some appropriate standard ...".

Lunt et al. (2003: 95) emphasise that one of the functions of a process evaluation is to allow for the interpretation of process-outcome results. The results of an outcome evaluation can be positive or negative, but the programme monitoring results may paint a more detailed picture of the demands to achieve the positive results or the reasons for negative results. According to Patton (2002: 159–160), a focus on process involves looking at *how* something happens rather than, or in addition to, examining outputs and outcomes. Evaluations vary in their emphasis on process, in part because programmes vary in their attention to process. Some therapy approaches in psychology are highly process oriented in that they focus on the relationship between client and therapist, how the client is approaching issues, how the client feels about the process, and the nature of the interactions that occur during therapy, rather than only or primarily on behavioural outcomes. By contrast, other interventions and programmes play down process. Their emphasis is on results and outcomes. Even in these cases, however, some process is undertaken to achieve results, and understanding the process–outcomes relationship necessitates documenting and understanding processes.

Weinbach (2005: 156) suggests programme monitoring should be directed at the following four key questions:

WHO ASSUMES WHAT ROLE?

Programme monitoring is generally conducted internally and is a function of those managers and individuals involved in the delivery of the programme. Monitoring assessment is conducted to assess programme fidelity – that is whether the intended activities occur in the intended way and are done by the intended people. It is very useful to include as many people involved in the programme delivery as possible to achieve this goal. This also facilitates a sense of shared ownership.

HOW MUCH DATA SHOULD BE COLLECTED?

In order to estimate the benefits or effectiveness of programmes relative to their cost, evaluators must have information on the resources expended in conducting the programme. Without adequate programme monitoring it is impossible to estimate the extent to which a service, its specific programme elements or interventions are effective. A key concept in programme monitoring is that the kind of evaluation decided on to monitor the inputs, the process and the target populations being served should be updated periodically – that is, every week, every month, every three months, or whatever period is feasible for the particular situation. However,

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Weinbach (2005) warns that data collection should never be so extensive that it hinders the functioning of the programme or the people involved. So the short answer to this question is: No more than is absolutely necessary.

WHAT DATA SHOULD BE COLLECTED?

Monitoring should be an ongoing activity and be conducted strictly for the benefit of the programme. It is vital that the focus of programme monitoring is on the programme, not on the staff. The most common data collected during programme monitoring would relate to demographic characteristics of participants, retention, sources of referral, staff turnover and an indication of the input the programme required in terms of staff time and costs. Matters such as the number of telephone calls made in the interests of the programme, number of meetings attended, distances covered and time spent on the service itself can also be recorded in order to eventually come to an assessment of cost effectiveness when outcomes are assessed. The use of programme monitoring data to assess staff performance is not only ineffective and potentially harmful to the collection of proper data on the programme, but also unethical.

HOW SHOULD THE DATA BE AGGREGATED AND STORED?

Weinbach (2005) emphasises that the data from programme monitoring belong to the people involved in the initiative and this information should be available and readily accessible to all. The information should in fact be aggregated from time to time and shared at meetings or in reports. This will facilitate day-to-day decisions about the programme and enable the ultimate goal of process evaluations, namely programme improvement.

8. SUMMATIVE EVALUATION

8.1 Impact or outcome evaluations

Outcome evaluations remain the best-known form of evaluation research as, mostly, this type of evaluation has the most potential to threaten the existence of a service, programme or intervention and the careers of the people who participate in them. There are also many benefits to outcome evaluations – the most prominent is the fact that an outcome evaluation allows the communication of best practice to people involved in similar innovations.

Impact and outcome evaluations are sometimes regarded as separate types of evaluation (Lunt et al. 2003), but mostly, impact evaluation in evaluation research is used in two ways by authors: firstly, it is simply another term for outcome evaluation, and secondly and most commonly, it is used to describe the measuring of shorter-term impacts of a programme in contrast to its longer-term outcomes. Lunt et al. (2003: 86) regard these terms as synonymous, defining impact evaluation as the activity directed at determining the positive or negative, intended or unintended, intermediate or longer-term outcomes of a programme.

Rossi et al. (2004) state that impact assessments are designed to determine what effects programmes have on their intended outcomes and whether, perhaps, there are important unintended effects. A programme effect, or impact, refers to a change

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in the target population or social conditions that has been brought about by the programme – that is, a change that would not have occurred had the programme been absent. "The problem of establishing a program's impact, therefore, is identical to the problem of establishing that the program is a cause of some specified effect" (Rossi et al. 2004: 234).

Rossi et al. (2004) further point out that impact assessment may be relevant at many points in the life course of a social programme. At the stage of policy formulation, a pilot demonstration programme may be conducted with an impact assessment to determine whether the proposed programme would actually have the intended effects. When a programme is initiated, it is often done at a limited number of sites. Impact assessment may be appropriate at that point to show that the programme has the expected effects before it is extended to a broader context. Even ongoing programmes are sometimes subjected to impact assessments.

According to Patton (2002: 151), outcomes evaluation has become a central focus, if not *the* central focus, of accountability-driven evaluation. The accountability movement is not so much about achievement quality as it is about demonstrating the responsible use of public funds to achieve politically desired results.

8.2 Efficiency evaluations

Some authors present efficiency evaluation as a type of outcome evaluation while others regard it as the same as a summative evaluation (Weinbach 2005). Yet others (Rossi et al. 2004; Nugent et al. 2001) regard efficiency evaluation as a specialised type of summative evaluation, and this is the way we will present it here. According to Rossi et al. (2004: 332–367), efficiency evaluation is a broad term including both cost-benefit and cost-effective analyses. A cost-benefit analysis requires estimates of the benefits of a programme, both tangible and intangible, and estimates of the costs of undertaking the programme, both direct and indirect. Once specified, the benefits and costs are translated into a common measure, usually a monetary unit. In cost-effective analyses, outcomes are expressed in substantive terms – that is, whatever form of outcome was envisaged initially, for example reduced medical care for a certain disease, or reduction in days lost from work.

The rationale for efficiency evaluations is that decision makers must choose how to allocate scarce resources to put them to optimal use. The decision on which to fund on a larger scale must take into account the relationship between costs and outcomes in each programme. The preferred programme is often the one that produces the most impact on the most targets for a given level of expenditure. The greatest value of efficiency analysis is probably that it forces us to think in a disciplined way about both costs and benefits.

In spite of their value, however, many formal, complete efficiency analyses are either impractical or unwise. Efficiency analysis may be unnecessary, for instance, if the efficacy of a programme is either minimal or extremely high. Conducting an efficiency analysis makes sense primarily when a programme is effective but not perfectly so. Also, the required technical procedures may call for a methodological sophistication not available to the project's staff. Nevertheless, although the results of all cost-benefit and cost-effectiveness analyses should be treated with caution, such analyses can provide a reproducible and rational way of estimating the efficiency of programmes.

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8.2.1 Ex ante or cost-benefit analyses and ex post or cost-effectiveness analyses

Cost-benefit analysis can be applied during the planning stages of a programme (called ex ante analysis) or after the programme has been in operation (ex post analysis) (Monette et al. 2008). Efficiency analyses are usually undertaken either prospectively, during the planning and design phase of an initiative (ex ante efficiency analysis), or retrospectively, after a programme has been in place for a time and has been demonstrated to be effective by an impact evaluation, and there is interest in making it permanent or possibly expanding it (ex post efficiency analysis).

In the planning and design phases, ex ante efficiency analyses may be undertaken on the basis of a programme's anticipated costs and outcomes. Because ex ante analyses cannot be based entirely on empirical information, they run the risk of seriously under- or overestimating net benefits (which may be understood, simply, as the total benefits minus the total costs). Ex ante cost-benefit analyses are most important for those programmes that will be difficult to abandon once they have been put into place or that require extensive commitments in funding and time to be realised. Thus, when a proposed programme would require heavy expenditures, such as erecting beach recreational facilities or testing health-care workers for HIV/Aids, decisions on whether to proceed can be influenced by an ex ante cost-benefit analysis. Most often, however, ex ante efficiency analyses for social programmes are not undertaken. Efficiency analyses in the social programme field usually take place after the completion of an impact evaluation – that is, when the impact of a programme is known.

Monette et al. (2008) mention that cost-benefit analysis, as a particular type of evaluation research, often serves as a foundation for social policy decisions. Cost-benefit analysis involves a basic calculation: add the costs of a programme, subtract this from the monetary value of the benefit and get the result = either a net gain (benefits exceed costs) or a net loss (costs exceed benefits). Because it is difficult to monetise benefits, interest has developed in an alternative approach that does not require benefits to be ascribed a monetary value. Cost-effectiveness analysis compares programme costs (measured in monetary value) with programme effects (measured in whatever effect the programme is supposed to produce). Monette et al. (2008) warn that cost-benefit analysis is only as good as the date, the estimates and the assumptions on which it is based.

In summary, the conditions that may require an ex post cost-benefit analysis of a programme include the following (Rossi et al. 2004: 361–362):

- The programme has independent or separable funding. This means that its costs can be separated from those incurred by other activities.
- The programme is beyond the development state, and it is certain that its effects are significant.
- The programme's impact and the magnitude of that impact are known or can be validly estimated.
- Benefits can be translated into monetary terms.
- Decision makers are considering alternative programmes, rather than simply whether or not to continue the existing project.

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SECTION E

8.2.2 Cost-effectiveness analysis

As suggested above, cost-effectiveness analysis requires monetising only the programme's costs; its benefits are expressed in outcome units. For example, the cost effectiveness of distributing free textbooks to rural primary school children could be expressed in terms of how much each R1 000 in project costs increased the average reading scores of the targeted children (cf. Rossi et al. 2004: 341).

Because of the controversial nature of valuing outcomes in many cases, especially regarding human services, cost-effectiveness analysis is seen as a more appropriate technique than cost-benefit analysis. Efficiency is expressed in terms of the costs of achieving a given result. This type of analysis can be especially useful in comparing the efficiency of different programmes. Rossi et al. (2004: 341) cite, for example, a comparison of alternative educational interventions by measuring the costs of each alternative for achieving a specific educational gain as measured by test scores. Relating costs to gains in mathematics and reading among elementary school children permitted a comparison of the cost effectiveness of different interventions. The analysis found that counselling by other learners provided more impact per $100 than other approaches. Surprisingly, such peer counselling was more cost effective than a high-tech, computer-assisted instruction programme.

Weinbach (2005: 180) warns that the process of conducting a cost-effectiveness analysis can be made more difficult if accurate data have not been kept throughout the life cycle of the programme. He suggests the following steps in completing a cost-effectiveness analysis:

1. Specify what will constitute a success.
2. Compute the total cost of the programme and subtract any fees received.
3. Collect data on programme outcomes and identify the number of successes.
4. Divide the cost of the programme by the number of successes it produced.

8.3 Utilisation evaluation

It is important to know the extent to which a programme is effective after it has been fully implemented; but to answer that question it is important to learn the extent to which the programme was actually implemented, Patton (2002: 161) notes. In his book *Utilization-focused evaluation* (1997), Patton suggests that if one had to choose between implementation information and outcomes information because of limited evaluation resources, there would be many instances in which implementation information would be of greater value. A decision maker can use implementation information to make sure that a policy is being put into operation according to design – or to test the very feasibility of the policy. Unless one knows that a programme is operating according to design, there may be little reason to expect it to produce the desired outcomes. Furthermore, until the programme is implemented and a "treatment" is believed to be in operation, there may be little reason even to bother evaluating outcomes.

One important way of studying programme implementation is to gather detailed, descriptive information about what the programme is doing. Implementation evaluations answer the following kinds of question: What do clients in the programme experience? What services are provided to clients? What do staff do? What is it like

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to be in the programme? How is the programme organised? As these questions indicate, implementation evaluation includes attention to inputs, activities, processes and structures.

Implementation evaluations tell decision makers what is going on in the programme, how the programme has developed, and how and why programmes deviate from initial plans and expectations.

If a process of ongoing adaptation to local conditions characterises the programme implementation, then the methods used to study the implementation should correspondingly be open-ended, discovery oriented and capable of describing developmental processes and programme changes, Patton (2002: 162) argues. Qualitative methods are ideally suited to the task of describing such programme implementation.

Failure to monitor and describe the nature of implementation, case by case, programme by programme, can render useless standardised, quantitative measures of programme outcomes. The study of the important programme implementation questions mentioned above requires case data rich in the details of programme content and context. Because it is impossible to anticipate in advance how programmes will adapt to local conditions, needs and interests, it is impossible to anticipate what standardised quantities could be used to capture the essence of each programme's implementation. Under these evaluation conditions, a strategy of naturalistic inquiry is particularly appropriate.

According to Rossi et al. (2004: 411), the worth of evaluations must be judged by their utility – that is, the extent to which they are effective and cost efficient. For this reason, considerable thought and research have been devoted to the use of evaluation results. As a starting point, the authors contend, the conventional three-way classification of the ways in which evaluations are used is helpful:

- *Direct* or *instrumental use* of their evaluations is prized by evaluators. By direct use is meant the documented and specific use of evaluation findings by decision makers and other stakeholders.
- *Conceptual utilisation* refers to the use of evaluations to influence thinking about issues in a general way. These evaluations do not necessarily lead to the adoption of specific programmes or policies, but provide evidence, for instance, that certain ways of delivering health, educational or welfare care are costly and inefficient.
- *Persuasive utilisation* refers to enlisting evaluation results in an effort either to defend or to attack political positions. For the most part, however, Rossi et al. (2004: 411) write, the persuasive use of evaluation is out of the hands of programme evaluators and sponsors alike.

In response to the question of whether evaluations have direct utility, the authors (Rossi et al. 2004) comment that disappointment about the extent of use of evaluations is apparently due to the limited direct or instrumental use of evaluations. It is clear that many evaluations initiated for their direct utility fall short of that mark. However, it is only in the past few years that the extent of direct use has been systematically studied. These recent efforts challenge the previously held belief that evaluations do not have direct utility.

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Regarding the conceptual use of evaluations, Rossi et al. (2004: 412) comment that every evaluator has no doubt had moments of glorious dreams in which a grateful world receives with adulation the findings of his or her evaluation and puts the results immediately and directly to use. However, most of our dreams must, alas, remain dreams. The authors argue, however, that the conceptual use of evaluations often provides important inputs into policy and programme development, and should not be compared to finishing the race in second place. Conceptual use may not be as visible to peers or sponsors, yet this use of evaluations deeply affects the community as a whole, or critical segments of it.

Conceptual use denotes the variety of ways in which evaluations indirectly have an impact on policies, programmes and procedures. This impact ranges from sensitising persons and groups to current and emerging social problems, to influencing future programme and policy development by contributing to the cumulative results of a series of evaluations.

9. EVALUATION DESIGNS

As mentioned at the beginning of this chapter, Duignan in Lunt et al. (2003: 78) outlines four conceptual levels of evaluation terminology that are extremely useful in avoiding confusion, namely evaluation approaches, evaluation purposes, evaluation designs and evaluation methods. The first two conceptual levels were discussed in the sections above (sections 4 and 5 respectively). The third conceptual level of evaluation terminology consists of evaluation designs. Evaluation designs refer to the way in which the ingredients are put together in an attempt to answer the evaluation questions. Again, as with any other research, this should not be confused due to the term "evaluation" attached to it. Evaluation research is still research and follows the basic scientific research process. As such, the designs available to the social science researcher as discussed in other chapters in this book remain equally relevant and appropriate to evaluation research. These include, among others, case studies, exploratory designs, and quasi-experimental and experimental designs (Duignan in Lunt et al. 2003).

In the chapters dealing with the subject of research designs, a research design is defined as a logical strategy for gathering evidence about knowledge desired. It must be efficient, which means it must actually yield the knowledge sought; it should be the simplest, cheapest way of acquiring the knowledge; it should be acceptable to the parties involved (including clients); and it should be as methodologically "tight" as possible. Yegidis and Weinbach (2006) state that there are many different ideas about what constitutes a fair yet rigorous evaluation design and that a design developed for one particular evaluation may be ill suited for another. Undoubtedly, the most valid and reliable measurement results are obtained by using the experimental research design. There will always be constraints on the design of any evaluation. These may arise from the context in which the evaluation takes place, availability of resources, stakeholder involvement, or for a variety of pragmatic and ethical reasons. As such, evaluators sometimes use less-than-perfect research designs, usually quasi-experimental or non-experimental designs.

Bamberger, Rugh and Mabry (2006) remind us of the range of quantitative, qualitative and mixed method designs available for evaluation research. The focus of

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this chapter does not allow a discussion of the range of designs available, as all of these have been covered in great detail in previous chapters, but the relevance of these designs for the particular types of evaluation research will be highlighted.

Formative and process evaluations tend to be primarily descriptive in nature and frequently utilise descriptive designs (Yegidis & Weinbach 2006). Needs assessment, as a type of formative assessment, typically combines elements of both quantitative and qualitative research, and the designs employed are mostly exploratory and descriptive. Needs assessment research should yield useful descriptive information about the specific character of the need within that population. A needs assessment might, for instance, probe why the problem exists and what other problems are linked to it. A few useful techniques exist for obtaining rich information about a social problem. These will be discussed under evaluation methods below (section 13).

Because of the distinctive advantages of qualitative and quantitative approaches, a useful and frequently used strategy is to conduct needs assessment in two stages. The initial, exploratory stage uses qualitative research approaches to obtain rich information on the nature of the problem. The second stage, estimation, builds on this information to design a more quantitative assessment that provides reliable estimates of the extent and distribution of the problem.

Evaluability assessments as described above are essentially qualitative research activities and can, therefore, best be undertaken by researchers comfortable with the qualitative paradigm. From a quantitative perspective, evaluability can be assessed in two dimensions, namely conceptualisation and an administrative structure for handling the programme. An inadequate *conceptualisation* of the programme is probably the most common problem in trying to evaluate any social programme. Evaluability assessment may result in efforts by programme managers to better conceptualise their programme. It may indicate that the programme is too poorly defined for evaluation or that there is little likelihood that the findings will be used. Alternatively, it could find that the assumptions underlying the programme are well defined and plausible, that evaluation findings will probably be used, and that a meaningful evaluation could be done.

Qualitative inquiry is highly appropriate for studying process evaluations, because of the following:

- Depicting process requires detailed descriptions of how people engage with each other.
- The experience of process typically varies for different people, so their experiences need to be captured in their own words.
- Process is fluid and dynamic, so it cannot be fairly summarised on a single rating scale at one point in time.
- Participants' perceptions are a key process consideration.

A process evaluation requires sensitivity to both qualitative and quantitative changes in programmes throughout their development, which typically means monitoring and describing the details of the programme's implementation. Process evaluations not only look at formal activities and anticipated outcomes, but they also investigate informal patterns and unanticipated interactions.

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SECTION E

Monette et al. (2008) remind us that summative evaluation research is often concerned with cause-and-effect relationships. The ideal design for summative evaluations therefore is true experimental designs. They do acknowledge, though, that the barriers to these designs may be sufficiently formidable so as to require alternative designs. According to Kreuger and Neuman (2006), three designs are available for impact evaluations: experimental, quasi-experimental and non-experimental. To conduct an impact evaluation, evaluators need a plan for collecting data that will permit them to demonstrate persuasively that observed changes are a function of the intervention *and cannot be accounted for in other ways*. Specific impact assessment plans vary considerably. Sometimes it is possible to use classic experimental designs in which control and experimental groups are constructed randomly and receive different treatments. For practical reasons, however, it is often necessary to employ statistical approaches rather than true experiments. Thus non-randomised quasi-experiments and other non-experimental methods are commonly employed in impact assessments. With proper safeguards and appropriate qualifications, such non-experimental designs can provide reasonably firm estimates of effects. These designs were discussed in Chapter 10 of this book.

10. EVALUATION METHODS

The final conceptual level of evaluation research is evaluation methods. Evaluation methods are the specific research methods or techniques which are used in practice to conduct an evaluation. Not unlike any other research, there are usually several evaluation methods which could possibly be implemented to answer an evaluation question. Mostly, these relate to the qualitative, quantitative or mixed method approach selected, and the appropriate design that informs the type of evaluation undertaken. For evaluation research these include, among all those mentioned in previous chapters, stakeholder consultation, literature reviews, observation, document analysis, interviews, questionnaires, feedback sheets, focus groups, etc. (Duignan in Lunt et al. 2003).

Kreuger and Neuman (2006) list a number of these methods as being particularly relevant to formative evaluations, including needs assessments, such as surveys, secondary information, interviews, focus groups, nominal groups and community forums. Most of these are discussed in various chapters in this book – as methods available to the scientific researcher. Community forums, key informants, social surveys and data-collection measures are most pertinent to evaluation research and are briefly described below.

10.1 Community forums

Community forums are a method particularly relevant to formative evaluation, particularly needs assessments, but can also usefully be employed with process evaluations where an intervention, service or programme is targeted at a specific geographical community or a community defined by a common purpose. The community forum is an open meeting of all people who are interested or have participated in a specific service, target population or social problem. Special notices of the meetings must be sent to groups of people who are known to have an interest in the mat-

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ter. All people who wish to participate in discussing the issue must be given an opportunity to do so. This approach has the advantage of being reasonably inexpensive, not requiring a lot of preplanning and, again, needing little research expertise to interpret or summarise the results.

There are some serious drawbacks to community forums. For one, the public seldom seems to attend them unless the issue is a controversial one. They are supposed to generate data, but often the only attendees are the staff and a few service providers from other agencies who have an interest in working with that specific population.

A second problem with community forums is that even when citizens from the community attend, there is no guarantee that they represent the community at large. Sometimes certain interest groups "pack" the meeting to the extent that the opinions of dissenters are not represented, and numerically small but vocal groups can dominate meetings.

10.2 Key informants

Making use of key informants means asking the opinion of a small number of people known to be involved with the services needed or programme implemented. Selection of the informants is a very important part of this method, because only a few respondents are used and their responses to the questions put to them have an important effect on the evaluation data. Key informants are usually selected because of their expertise in the relevant area of service, or because they wield power in the environment where the decisions have to be made. Key informants could also include child protection workers and their supervisors, or area ministers.

Rossi et al. (2004) agree that perhaps the easiest, though by no means most reliable, approach to estimating the extent of a social problem is to ask key informants – persons whose position or experience should provide them with some knowledge of the magnitude and distribution of the problem. On the grounds that key informants' reports of the extent of a problem are better than no information at all, evaluators may wish to use a key informant survey when a better approach is not feasible. With process evaluations, key informants can provide valuable feedback on how they perceive a programme or series of interventions to be operating. Snowball sampling works especially well for key informant surveys about social problems.

10.3 Social surveys

The sample or social survey is the method most often used for gathering new needs assessment information. This data collection method has been well described in Chapter 12 of this book. In a well-designed survey the researcher draws a random sample of the target population, asking them about their needs and/or their opinions on the types of service needed.

10.4 Qualitative and quantitative data-collection measures

Kreuger and Neuman (2006) regard case studies and focus groups as effective methods for enabling process evaluations, while a range of quantitative methods

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are listed as appropriate for summative evaluations, including questionnaires, feedback sheets and document analysis. Data-collection measures designed to collect programme or intervention specific information will typically be used to collect data for programme monitoring or outcome evaluations. These measures have all been addressed in one way or another elsewhere in this book.

11. THE PROCESS OF EVALUATION RESEARCH

Every type of evaluation as outlined above is unique. However, planning and conducting any type of evaluation research usually follows a process – or at least the same series of steps, and these display huge similarities to the scientific research process. This is no surprise, as evaluation research comprises the use of scientific research methods (Weinbach 2005). The researcher will thus, in conducting an evaluation, implement the basic research process, but with a unique focus. Several authors (e.g. Weinbach 2005; Bamberger 2006) propose steps to this effect. In considering the four conceptual levels of evaluation research as proposed in this chapter alongside a range of possible steps, an interesting logic unfolds, and we propose this as a focus to be considered in the process of conducting evaluation research. Refer to Figure 27.2 for a visual schema of the integrated model for evaluation research.

11.1 Determine the approach to the evaluation

The evaluator must determine how he or she would like this evaluation to be known – that is the philosophical and value orientations to underpin the task. If an empowerment evaluation is, for instance, pursued, it is important that the evaluator states this as the main driver. Fetterman (2001: 1) defines empowerment evaluation as the use of evaluation concepts, techniques and findings to foster improvement and self-determination. Empowerment evaluation can create an environment that is conducive to empowerment and self-determination. The process is fundamentally democratic in the sense that it invites (if not demands) participation, examining issues of concern to the entire community in an open forum (Fetterman 2001: 3). Kreuger and Neuman (2006) cite Rodgers-Farmer and Potocky-Tripodi (2001), who contend that within the empowerment framework, power is shared and the researched become "co-researchers". The planning and implementation of such an evaluation will therefore be different to one where any other value orientation (such as stakeholder input) is defined as the driver. When stakeholder evaluation is, for instance, pursued, the focus will be less on empowerment and self-determination (as in the example highlighted above), with the importance of stakeholder voice, input, ownership and participation as paramount.

This is not to say, obviously, that one particular philosophical stance or value orientation to evaluation excludes others. Naturally, stakeholders are important to all types of evaluation, but a stakeholder evaluation will place particular prominence on this aspect which may be less so in other approaches to the evaluation. In this important first step, the evaluator therefore declares the chosen paradigm or "the colour of the glasses" through which the evaluation will be viewed.

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Evaluation approach	**Philosophical and value orientations**		
Purpose of evaluation	**Formative** (Information for forming or improving)	**Process** (Information for describing and delivery)	**Summative** (Information for measuring outcomes)
Type of evaluation	Needs assessments	Monitoring	Impact/outcome assessments
	Evaluability assessment		Efficiency assessments
			Utilisation assessments
Evaluation designs	Ways in which ingredients are put together in an attempt to answer the evaluation questions		
Evaluation methods	Techniques used in practice to conduct an evaluation		
Life cycle	**Beginning** ⟶	**Middle** ⟶	**End**

Figure 27.2 Integrated model of evaluation research

11.2 Conceptualise the purpose

When a prospective evaluator has decided, or been approached, to undertake an evaluation of a programme, a conceptualisation of the purpose and type of evaluation (as outlined in this chapter) must be done, as this will eventually influence which design and methods would be appropriate and feasible (Bamberger et al. 2006).

11.3 Scope the evaluation

A function of evaluation is to provide facts to those who make decisions about programmes – that is the providers of a service, their supervisors and managers, programme funders and supporters, and sometimes even service users or potential service users. And as we have seen above, this is often linked to the life cycle of the programme, service or intervention. Depending on the questions the evaluation aims to answer and the data required to answer them, evaluation research can be very expensive in either time, monetary and human resource terms (or all of these!). It is useful for an evaluator to understand the expectations of the key stakeholders and to determine what should and can be done, given the constraints of money, time, data availability and political considerations (Bamberger et al. 2006).

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It is advisable, as with all other research, that an evaluation research study is scoped before final decisions about design are made. Everyone involved in the work to be evaluated should also be involved in deliberations about what is to be measured, and why, how and to what end. Evaluation plans should never be conceived in private by the evaluator or manager and then sprung on the persons concerned as a preconceived plan.

11.4 Select the design that best supports the type of evaluation selected

As discussed above, Bamberger et al. (2006) highlight a range of quantitative, qualitative and mixed method designs available for evaluation research. Formative and process evaluations tend to be primarily descriptive in nature, and frequently utilise descriptive designs (Yegidis & Weinbach 2006). The ideal designs for summative evaluations are true experimental designs (Monette et al. 2008) while three designs are available for impact evaluations: experimental, quasi-experimental and non-experimental (Kreuger & Neuman 2006). It is important that the evaluator selects the design, or combination of designs, that best supports the type of evaluation selected.

11.5 Select the research methods that best support the type of evaluation selected

Evaluation methods are another conceptual level of evaluation terminology, as discussed above. Some methods may be more appropriate for executing different types of evaluation than others. The evaluator should determine how much data are available from secondary sources and how much need to be collected as original data. Reports of organisations and other public reports such as governmental reports and published statistics are often underutilised in needs assessment research. Most organisations do have records of clients served and how they were served, and usually contain, albeit in a tentative form, information on the results of those services. Enumerations of who was served also indicate who was *not* served. By analysing such information closely, needs can already be identified to a limited extent. Even data generated by other researchers or surveys can be re-examined for relevance to the new programme.

Secondary data sources are generally convenient to access and easy to understand and use. If reports or baseline information is examined systematically and periodically, shifts and changes in the characteristics and needs of clientele can be observed. However, Bamberger et al. (2006) warn that even if project records or other secondary sources of data are available, these are often not organised in the form needed, or suffer from reporting biases and/or poor record-keeping standards. Kreuger and Neuman (2006) add that a further disadvantage of secondary data is that it may limit the kinds of information to the pre-existing categories. Studying existing information can thus at best serve as preparation or orientation to a further needs assessment. However, such a study of existing material can be very useful.

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11.6 Making sense of it all

Organise, analyse and interpret data and report on the questions asked at the beginning of the assessment. Taking findings at face value can be misleading and even dangerous. Because experimental research designs can be impractical in service agencies, variables other than basic interventions are not controlled. Extraneous variables do intervene, for example suicides increase over the Christmas period, there are fewer street children out and about in icy weather, and a troubled marriage can temporarily improve with a new event like the husband moving to a more satisfying job. Hence, when analysing the findings and working out what they mean, both disciplined objectivity and lateral thinking are required.

The product of the measurement process is a set of conclusions based on fact that must be reported to the "consumers" of the research and *used to improve current service policy and practices*. Since resources – both financial and manpower – are so scarce, effective practice requires and deserves more than programmes that are fundamentally expensive value statements, or experimentation with idiosyncratic beliefs. For both our agencies and our clients, we need interventions that work, and the only way to be sure that they work is to measure their effectiveness.

Hence, let us not look upon evaluation and measurement as an imposition, a burden or a threat; rather let us see them for what they are, namely an opportunity to improve our practice to the benefit of our clients and for our own professional satisfaction. According to Patton (2002: 67), the attempt to understand a programme or treatment as a whole does not mean that the investigator never becomes involved in component analysis or in looking at particular variables, dimensions and parts of the phenomenon under study. Rather, it means that the qualitative inquirer consciously works back and forth between parts and wholes, separate variables, and complex, interwoven constellations of variables in a sorting-out then putting-back-together process. While staying true to a strategy that emphasises the importance of a holistic picture of the programme, the qualitative evaluator recognises that certain periods of fieldwork may focus on component, variable and less-than-the-whole kinds of analysis.

Patton (2002: 68) further argues that it is not necessary to be a qualitative methods purist. Qualitative data can be collected and used in conjunction with quantitative data. Today's evaluator must be sophisticated about matching research methods to the nuances of particular evaluation questions and the idiosyncracies of specific stakeholder needs. Such an evaluator needs a large repertoire of research methods and techniques to use on a variety of problems. Multiple methods and a variety of data types can contribute to methodological rigour. The ideal in evaluation designs is methodological appropriateness, design flexibility and situational responsiveness in the service of utility – not absolute allegiance to some ideal standard of paradigm purity and methodological orthodoxy.

11.7 Making it useful

Despite the significant investment in evaluations, the findings are often underutilised. There are a number of reasons for this state of affairs. The solution to all of these points to the responsibility of the evaluators to make the findings appropriate.

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People involved in an evaluation are aware that this always entails making a judgement about the value of a given intervention, service or programme. However, they also know that good evidence is difficult to develop and that lasting achievements are not always easily communicated. Thus, it is not uncommon to discover a fear that an intervention regarded as valuable by many may show up in a bad light during an evaluation, and this fuels the lack of uptake of evaluations and the consideration of evaluation findings.

Evaluations are also threatening to individuals and organisations for other reasons. The fundamental purpose of evaluation is to use measurements of outcome to plan better services for clients. It is *not* to put individual practitioners “on the line”, or to rate the effectiveness of supervisors, or to reflect how competent management is, although of course indirectly there can be repercussions in these areas. However, in the right professional spirit of wanting to give the best possible service to clients, evaluation and measurement can, instead of being threatening, help practitioners, supervisors and management to direct and, if necessary, redirect their efforts to better purpose. To allow this, the use of the data should be agreed upon, clearly and specifically, within the organisation.

Even if the data are collected for the right reasons, the use of evaluation findings is still disappointingly low. The non-use or misuse may be intentional in some cases, but mostly, according to Bamberger et al. (2006: 158), the low uptake of evaluation findings may also be due to a lack of understanding on how to interpret and use the findings. It is important that measures are put in place in a timely way so as to ensure adequate, clear and reliable dissemination.

SUMMARY

In this chapter evaluation research is viewed as the use of research methods to make judgements about the effectiveness and the overall merit, worth or value of some form of practice. The chapter commences with a brief description of the history of evaluation research. Different conceptual levels of evaluation research are then presented and discussed in turn. The chapter ends with reference to the process of evaluation research. An integrated model for evaluation research is presented.

Self-evaluation and group discussion

Discuss why people may be fearful of evaluations and more so of summative than formative evaluations.

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28

AS DE VOS & H STRYDOM

Intervention research

Learning objectives

Studying this chapter should enable the reader to

- take cognisance of the history of intervention research
- become familiar with the phases and steps of the intervention research model, as illustrated by a recent example of such research in South Africa.

1. INTRODUCTION

Intervention research is introduced in this chapter as an exciting new view of applied research in social work, which should be useful to many other human professions. However, because of the relative newness of the intervention research model, some orientation to its history is necessary.

1.1 Historical orientation to intervention research

1.1.1 Edwin J. Thomas

Intervention research is a concept which grew from the collaboration between the two pioneers in the field of developmental research, Edwin J. Thomas and Jack Rothman. Developmental research here denotes the development of a technology, or rather a technological item, essential to a profession such as medicine, nursing, psychology or social work.

Thomas in Grinnell (1981: 590) states in one of his earliest explications of the developmental research and utilisation model (DR&U) at the time that social work research has traditionally been directed primarily at what has come to be known as knowledge development. It draws its methods largely from the behavioural sciences and uses them to examine research questions relevant to social work and social welfare. This model of research in social work is often referred to as the behavioural sci-

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ence model, because its objective is to make contributions to the knowledge of human behaviour. Its objectives are exploratory, descriptive or explanatory, and its goal is pure or basic research, but in some instances also some form of applied research.

Developmental research, in contrast, is very different and was not well known at the beginning of the 1980s. This research model developed owing to the need of professions such as social work for a technology – as in engineering, medicine and all other fields dealing with applied and practical matters. Technology, in this context, consists of all the technical means by which such a profession achieves its objectives (Thomas 1981: 591).

Later Thomas (1984) published a book in which he modified his DR&U model by adding a separate phase called "design", with its relevant steps. Here the importance of first carefully designing a technological item was emphasised. The updated model was named the design and development (D&D) model.

1.1.2 Jack Rothman

The work of Rothman (1980) progressed alongside that of Thomas and is better known in some circles. He called his model of developmental research social research and development (R&D). The objectives and methodology of his model had much in common with those of Thomas, but also differed in some respects.

1.1.3 Effects of collaboration

These two pioneers collaborated and together they published a book titled *Intervention research: design and development for human service* (1994), in which they integrated their developmental models into a new model (intervention research). These authors thus argued that to develop technology in the human service professional fields requires a special type of research, mainly akin to the developmental research undertaken in the fields of engineering and business, and adapted to the needs of the human professions such as social work and others.

However, it is important to take note of the fact that Rothman and Thomas viewed design and development research as one of three kinds of intervention research. The other two are, firstly, empirical research, to extend knowledge of human behaviour and to relate such knowledge to human service intervention – referred to as intervention knowledge development, or KD; and secondly, the means by which the findings from intervention knowledge development research may be linked to and utilised in practical application – referred to as intervention knowledge utilisation or KU. Although there are critical differences in their objectives and methodologies, the above three research endeavours have a dual commonality in that they belong to the genre of applied research and have a specific intervention mission (Rothman & Thomas 1994: 3–4).

1.1.4 Symposium on psychosocial intervention research

In 1996, a two-day symposium was jointly presented by the Institute for the Advancement of Social Work Research (IASWR) and the National Institutes of Health (NIH) in the US. The shared goal of the symposium was to enhance research on health-related psychosocial intervention, and was a preliminary effort to spur intervention research within social work (Ell 1997). The September 1997 issue of

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the journal *Social Work Research* was wholly devoted to articles based on papers delivered at this symposium.

1.2 Expansion of types of intervention research

One of the speakers at the 1996 symposium mentioned above contributed an expansion of the types of intervention research that might develop in future (Schilling 1997). Referring to Rothman and Thomas's (1994) conceptualisation of three core endeavours in intervention research (intervention knowledge development, knowledge utilisation, and design and development), Schilling (1997: 173; 174) writes that, conceived somewhat more broadly, at least five kinds of studies may be subsumed under intervention:

1. Studies that attempt to understand problem phenomena, undertaken with the objective of developing interventions (akin to KD)
2. Research on the process of helping (akin to KU)
3. Longitudinal studies that observe what happens to clients during and after their agency contact
4. Studies that systematically design and develop interventions (D&D)
5. Full-scale experiments, testing clinical or social change strategies in agency, field and community settings

However, in spite of such commendable potentialities, relatively few rigorous intervention studies are conducted in social work.

1.3 Definitions

Cozby (2009: 205), Neuman (2006: 26) and Schilling (1997: 174) see an intervention or evaluation as an applied action undertaken by a social worker or other helping agent, usually in concert with a client or other affected party, to enhance or maintain the functioning and wellbeing of an individual, family, group, community or population. Babbie (2010: 363) adds that the aim of evaluation research is to determine the impact of a particular programme aimed at solving a social problem. The ultimate aim of intervention research is just that – adding other aspects such as needs assessment before the programme is compiled and evaluated.

Intervention research is defined as studies carried out for the purpose of conceiving, creating and testing innovative human services approaches to preventing or ameliorating problems or to maintaining quality of life. Barker (2003: 226–227) states that intervention means to intercede in or come between individuals, groups or communities, and is analogous with the term *treatment*. The term *intervention* is, however, preferred because it includes treatment and other activities to solve or prevent problems or achieve goals. Babbie and Mouton (2001: 88) and Monette et al. (2008: 312) add that interventions should be deliberate, structured, sustainable, valid and reliable in order to lead to clearly identifiable outcomes and benefits for the participants of the programme. Grinnell and Unrau (2008: 166) state that the operational definition of intervention research must be specified in measurable and observable terms of what the researcher will be doing, to whom, when, how often and where. This process of reflecting on the interventions being used is called *moni-*

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toring interventions (Marlow 2005: 113). In this manner the accomplishment of the objectives of the programme and the uniform application of the intervention process can be ensured in order to compare it to other interventions and to replicate it in other similar settings (Royse, Thyer & Padgett 2010: 12).

The foci of intervention researchers in a generalist profession like social work may not always be readily distinguished from those of their counterparts in psychology, public health, nursing and education. In general, however, social work interventions include strategies that draw on and seek to strengthen the social ties between the individual and the social environment (Schilling 1997: 174). Cozby (2009: 205) mentions a few of these strategies or methods that can be used in research endeavours such as experiments, surveys and participant observation.

2. THE PROCESS OF INTERVENTION RESEARCH

In view of the fact that the other variations on models of intervention research have not yet been developed to any considerable degree, but that the D&D model has, we shall study this model in more detail, using an example of recent research in South Africa based upon it. A number of other studies can be mentioned where doctoral students endeavoured to apply the intervention model in their field of practice. The following are a few examples: *Complicated grief in the South African context – a therapeutic intervention programme* (Drenth 2008); *Life maps as technique in a social group work programme for young adults with HIV and Aids* (Herbst 2002); and *Evaluation of an HIV and Aids programme for students at a tertiary institution with emphasis on peer group involvement* (Strydom 2002). The intervention research model can specifically be applied to larger studies such as doctoral studies where at least two phases can be combined, using both quantitative and qualitative studies in mixed method research, as explained by Creswell (2009). The intervention research model is a phase model consisting of the following six phases:

1. Problem analysis and project planning
2. Information gathering and synthesis
3. Design
4. Early development and pilot testing
5. Evaluation and advanced development
6. Dissemination

Each of these phases in turn comprises a series of steps or operations. Readers are reminded that not all phase models, whether in practice or research, can be viewed as patterns of one phase rigidly following the next. Although performed in a stepwise sequence, Thomas and Rothman (in Rothman & Thomas 1994: 9) mention that some or many of the activities associated with each phase continue after the introduction of the next phase. Also, there is sometimes looping back to earlier phases as difficulties are encountered or new information is obtained.

2.1 Problem analysis and project planning

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Barker (2003: 405), Hastings (1979: 119) and Royse et al. (2010: 17) quote a few

examples of definitions of social problems as follows: social problems are conditions of society which have negative effects on large numbers of people; a social problem is a condition that has been defined by significant groups as a deviation from some social standard, people's values or breakdown of social organisation that causes economic and emotional suffering; a social problem is a condition affecting a significant number of people in ways considered undesirable, about which it is felt something could be done through collective action. One characteristic of these definitions is obvious: they separate a social problem from a personal one. If you have a toothache, that is your personal problem. If millions are demanding a national programme of dental insurance, there is a social problem. If you cannot find a job, that is your problem. If millions cannot find jobs, and they are going hungry and resort to mass action, that is a social problem.

A case study of a senior researcher who utilised this model is described below (Prinsloo 2001). We believe that studying an example can promote a clear understanding of how this model has been, and therefore can be, applied in practice in future and in other contexts. Prinsloo (2001: v) writes that modern marriage is exposed to different stressors having an influence on marital adaptation and marital satisfaction. The high divorce rate confirms this observation. Services for marital enrichment are not as freely available as marital therapy and divorce guidance.

The phase of middle age is one demanding particular adjustments. For her MA degree Prinsloo (1994) did an in-depth study of the prevalence of the high divorce rate in South Africa, especially in the phase of the early middle years and of the adaptations the marital partners have to make during those years. She identified the demands of careers, financial management and the raising of children as some of the stressors on marriage in this phase. Approximately one quarter of South African divorces among the white population fall in the phase of middle age. Marital satisfaction is the lowest in the phase with adolescents in the family, namely couples married 15 to 24 years. The divorce rate for couples in this phase of marriage is approximately 18 per cent.

A lack of programmes has been found in investigating the literature and looking into the needs of couples in South African society. Existing programmes are often presented in a haphazard way, with a negative impact on the marital relationship. The factors mentioned above confirmed the existence of the social problem the researcher wanted to address.

Several operations have been found by Fawcett et al. (in Rothman & Thomas 1994: 27–28) to be critical to this model. These operations were formulated as the following series of steps to be executed during this phase:

- Identifying and involving clients
- Gaining entry and cooperation from settings
- Identifying concerns of the population
- Analysing identified problems
- Setting goals and objectives

2.1.1 Identifying and involving clients

Intervention researchers choose a constituency or population with whom to collaborate. A population is selected whose issues are of current or emerging interest to

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clients themselves, to researchers and to society. In collaboration with the project's clients, researchers identify the specific targets and goals of the intervention. Bloom, Fischer and Orme (1999: 69–70) say the initial step is to start where the clients are, after all matters of concern to the client, group, community or agency have been fully scrutinised. Research that addresses the critical strengths and problems of important constituencies has a greater chance of receiving support from the target population, professional community and general public (Fawcett et al. 1994: 29–30).

For the example chosen to illustrate the model, the researcher (Prinsloo 2001: 10) identified the clients to be served as marriage partners with a marriage duration of 15 to 24 years.

2.1.2 Gaining entry and cooperation from settings

Key informants can explain local ways to researchers and introduce them to gatekeepers who control access to the setting. Conversations with key informants help researchers understand what they have to offer and how to articulate the benefits for potential participants and members of the group or organisation. Successful intervention researchers form a collaborative relationship with representatives of the setting by involving them in identifying problems, planning the project and implementing selected interventions. Collaboration helps provide a sense of ownership of the investigation. By working together with those who can facilitate access, researchers gain the cooperation and support necessary to conduct intervention research (Fawcett et al. 1994: 29).

For the relevant example, the researcher (Prinsloo 2001: 11) discussed the need for and possibility of marital enrichment with the pastor of a congregation in Centurion, Pretoria, who can be seen as the "gatekeeper" in this instance. The pastor announced during a church service that such a programme might be offered, and the reaction was very positive. The marriage partners who were interested in attending the programme stated later that the phase when adolescent children are still at home is not easy, and that problems are complicated by societal demands in terms of careers and finances.

2.1.3 Identifying concerns of the population

Intervention researchers must avoid projecting external views of the problem and its solution. Once they have access to the setting, applied researchers must attempt to understand the issues of importance to the population. Researchers use informal personal contact methods, surveys and community forums (Fawcett et al. 1994: 29).

Prinsloo (2001: 11–12) writes that the quality of marriages is a source of great concern, not only to professionals who are active in this field, but also to ordinary members of society, who often express such concern with regard to friends, family members, acquaintances and outsiders who are divorcing or have divorced. The target group sampled to participate in this research also expressed the same concern.

2.1.4 Analysing concerns or problems identified

A critical aspect of this phase, Fawcett et al. (1994: 30–31) write, is analysing those conditions that people label as community problems. Some key questions help guide

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the process of problem analysis. What is the nature of the discrepancy between ideal and actual conditions that defines the problem? For whom is the situation a problem? What are the negative consequences of the problem for affected individuals? What are the negative consequences of the problem for the community? Who (if anyone) benefits from conditions as they are now? How do they benefit? These questions explore the consequences that help to explain why the problem exists and why interventions have either not been successful nor attempted.

Who should share the responsibility for solving the problem? What behaviours, and of whom, need to change for clients to consider the problem solved? What conditions need to change to establish or support the necessary change? At what level should the problem be addressed? Does the problem manifest itself in the behaviour of key individuals in the immediate physical or social environment with broader structural conditions such as chronic unemployment, or with governmental or business policies?

Intervention researchers will no doubt find that moulding these questions into a protocol for the analysis of identified problems will offer valuable guidelines. In our selected example, the researcher (Prinsloo 2001: 12) analysed the identified problem as follows: The high divorce rate indicates that marriage partners do not necessarily request help with marital problems. The availability of marital enrichment programmes as an alternative to therapy is limited and the programmes are often so expensive that the average marriage partners cannot afford to attend them. Although marital enrichment programmes exist and are advertised, they are also not so widely available that they are generally used. The reasons for this situation may be as follows:

- Marriage partners are often still convinced that they should not talk to others outside the marriage. What happens in the relationship is private.
- Marriage partners are ashamed to ask for help and often allow the problems to become so serious that therapy becomes necessary.
- When things become really bad, it then seems easier to seek help (at a cost) in desperation. The possibility of marriage counselling is then seen as a way out, while marital enrichment could have been a preventive strategy at an earlier stage.

These aspects have a negative impact on the growth of the marital enrichment movement. However, the attitude of marriage partners could be changed by means of correct marketing of marital enrichment programmes.

2.1.5 Setting goals and objectives

A final operation in this phase is setting measurable and ultimate goals and objectives (Bloom et al. 1999: 79; Fawcett et al. 1994: 31; Neuman 2006: 545). Goals refer to the broad conditions or outcomes that are desired by the community of interest. Objectives refer to those more specific changes in programmes, policies or practices that are believed to contribute to the broader goal.

In this phase, Fawcett et al. (1994) state, a careful problem analysis yields potential targets for change and possible elements of the intervention. Stating broad goals and specific objectives clarifies the proposed ends and means of the interven-

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tion research project. These refined purposes help to structure the next phase of knowledge gathering and synthesis.

In the light of her analysis of identified problems, Prinsloo (2001: 4) formulated the purpose or goal of her research as "the development, presentation and evaluation of a marital enrichment program to couples in early middle age, presented by means of growth-oriented social group work". Her objectives were to (Prinsloo 2001: 4)

- conduct a literature review about the changed nature of marriage; about marital enrichment as a method to improve the quality of marriages; and about growth-oriented social group work
- develop a marital enrichment programme for marriage partners in the early middle years
- present the marital enrichment programme
- evaluate the influence of the marital enrichment programme on the marital satisfaction of the marriage partners
- draw conclusions and make recommendations in view of the results of the evaluation.

The hypothesis the researcher formulated can be translated as follows (Prinsloo 2001: 5): If marriage partners in the early middle years attend a marital enrichment programme, presented by utilising growth-oriented social group work, their marital satisfaction will improve.

2.2 Information gathering and synthesis

In this model, information gathering and synthesis might be subtitled "Not reinventing the wheel", according to Fawcett et al. (1994: 31–32). When planning an intervention research project, they write, it is essential to discover what others have done to understand and address the problem. Knowledge acquisition involves identifying and selecting relevant types of knowledge, and using and integrating appropriate sources of information. Particularly useful sources are existing forms of archival information and natural examples of successful practices of individuals or organisations. The outcome of this phase is a list of apparently functional elements that can be incorporated into the design of the intervention. The authors indicate that the operations or steps of this phase are as follows:

- Using existing information sources
- Studying natural examples
- Identifying functional elements of successful models

2.2.1 Using existing information sources

A literature review usually consists of an examination of selected empirical research, reported practice and identified innovations relevant to the particular concern being studied. Computerised databases may be particularly helpful in retrieving possible sources of information.

Intervention researchers must, however, look beyond the literature of their particular fields. This is essential, since societal problems do not confine themselves

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neatly to the various human and social science disciplines. Thus, intervention research must contribute both to the scholarship of discovery (the generation of new knowledge about behaviour–environment relations) and the scholarship of integration (establishing new linkages between concepts and methods of various disciplines) (Fawcett et al. 1994: 32).

Prinsloo (2001: 14–15) used a variety of literature searches conducted for her in the fields of the social sciences and theology by the Academic Information Service of the University of Pretoria. These preliminary literature searches yielded few recent sources. The researcher concluded that in South Africa there was still a strong focus on remedial work rather than on enrichment. The impression was also gained that the marital enrichment movement was still in its infancy even in the US, and that the main focus was on the treatment of problems. The researcher contacted the *Smart marriages* movement in the US in an effort to trace more recent material, and even this effort yielded very few results.

The subsequent search for information on growth-oriented social group work again yielded no recent sources. The researcher concluded that she had to fall back on relatively dated existing information sources.

2.2.2 Studying natural examples

A particularly useful source of information is observing how community members faced with the problem being studied, or a similar problem, have attempted to address it. Interviews with people who have actually experienced the problem (such as clients), or those with knowledge about it (such as service providers), can provide insights into which interventions might or might not succeed, and the variables that may affect success. If the researcher is still not 100 per cent clear about the problem after doing this more informal research of interviewing a few key informants in the community affected by the particular problem, more formal procedures can be instituted. A needs assessment by way of a properly structured survey of a representative number of involved people can be done. This can serve as a needs assessment outcome (Adler & Clark 2008: 409; Cozby 2009: 206).

Doing empirical research associated with literature study on the topic will yield results on which to base the initial programme. Studying unsuccessful programmes and practices may be particularly valuable, since negative examples help us to understand methods and contextual features that may be critical to success (Fawcett et al. 1994: 32–33). The selected researcher (Prinsloo 2001: 15) found natural examples when conducting her pilot study for earning the MA degree. She found that the marriages of middle-aged persons required adaptation to the changes of this new phase of life (Prinsloo 1994: 268). Marital satisfaction is not necessarily lower than it was previously, and this is exactly why marital enrichment could make a contribution.

2.2.3 Identifying functional elements of successful models

Once information has been gathered, researchers analyse the critical features of the programmes and practices that have previously addressed the problem in question. Some questions to ask are: Is there a model programme, policy or practice that has been successful in changing targeted behaviours and outcomes? What made a par-

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ticular programme, policy or practice effective? Is there a model programme, policy or practice that was unsuccessful? What caused it to fail? Which events appeared to be critical to success (or failure)? What conditions (e.g. organisational features, client characteristics, broader environmental factors) may have been critical to success (or failure)? What specific procedures were used?

By studying successful and unsuccessful models or programmes that have attempted to address the problem, researchers identify potentially useful elements of an intervention. This synthesis of existing knowledge helps to guide design and develop activities (Fawcett et al. 1994: 33).

Prinsloo (2001: 15) used programmes described in the literature when developing the enrichment programme that was presented as part of the pilot study and in the final phase of this project. These programmes were identified as successful models, and functional elements of the models were incorporated into the new marital enrichment programme that Prinsloo developed.

2.3 Design

The crucial importance of the design phase was clearly realised by Fawcett et al. (1994: 34), as it originally had been by both Rothman and Thomas, not only in that a separate phase called design is also assigned to the new model – as in Thomas's 1984 model – but also because the model itself is similarly named design and development. Clear indications are given as to what is to be done during this phase:

1. Designing an observational system
2. Specifying procedural elements of the intervention

2.3.1 Designing an observational system

Researchers must design a way of naturalistically observing events related to the phenomenon, as well as a method system for discovering the extent of the problem and detecting effects following the intervention. This is critical to pilot testing. The observational system is closely linked to the process of designing an intervention; it serves as a feedback system for refining early prototypes. Clients, especially those most affected by the issue, should be involved in specifying the behaviours and environmental conditions that need to be changed (and observed).

Once the focus of change is identified, it is necessary to define these behavioural events in ways that can be observed. The observational system consists of the following three working parts:

- Definitions of the behaviours or products associated with the problem are defined in operational terms.
- Examples and non-examples of the behaviours or products are provided to help discern occurrences of the behaviour or product.
- Scoring instructions are prepared to guide the recording of desired behaviours or products.

Relevant behaviours and outcomes may be measured using direct observation by independent observers or self-monitoring or self-reporting for events that may be

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difficult to observe directly. This strategy – also known as functional analysis – helps to establish relationships between environmental changes and behaviours related to the problem.

The type of measurement system to be chosen depends on many factors, according to Fawcett et al. (1994: 35), including how many individuals and behaviours must be observed, the length of the observation sessions, the duration of intervals within the session and the availability of trained observers. The reliability and validity of the observations are affected by observer training and experience, and by the complexity and obtrusiveness of the measurement system. Preliminary results obtained from the observation system help to guide the selection of procedures and their refinement.

However, Prinsloo (2001: 17) did not design or use any formal observational system.

2.3.2 Specifying procedural elements of the intervention

By observing the problem and studying naturally occurring innovations and other prototypes, researchers can identify procedural elements for use in the intervention. These procedural elements – including the use of information, skills and training for their acquisition, environmental change strategies, policy change or enforcement strategies, or reinforcement or punishment procedures – should be specified in sufficient detail to be able to be replicated by other typically trained change agents. The embryonic observational system and intervention are refined in the next phase of intervention research. The procedural elements of an intervention often become part of an eventual practice model which is the final product of the research.

The procedural elements in Prinsloo's (2001: 17) intervention were determined by the existing programmes that she used, and the process of social group work. These were identified as the preparatory phase, beginning phase, working phase and termination, as presented by Toseland and Rivas (2000). Components mentioned most often during the pretests, such as communication, conflict resolution and growth, separately and together, were integrated into the programme.

2.4 Early development and pilot testing

Thomas (1989: 584–587) defines development as the process by which an innovative intervention is implemented and used on a trial basis, developmentally tested for its adequacy, and refined and redesigned as necessary. It is one of the least mature aspects of the developmental research methodology. However, there have been several contributions to development in recent years that – if widely adopted – could substantially strengthen the developmental process. These are developmental practice, a conception of developmental validity and selected techniques of developmental testing.

During the early development and pilot-testing phase, Fawcett et al. (1994: 36) maintain, a primitive design is evolved to a form that can be evaluated under field conditions. This phase includes the important operations of developing a prototype or preliminary intervention, conducting a pilot test and applying design criteria to the preliminary intervention concept.

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2.4.1 Developing a prototype or preliminary intervention

As is indicated above, a prototype enrichment programme was designed by the researcher (Prinsloo 2001). The programme was completed before the first notice was given in a church service that such a programme would be presented.

2.4.2 Conducting a pilot test

Pilot tests are designed to determine whether the intervention will work, in other words "to see if the beast will fly". Pilot tests are implemented in settings convenient for the researchers, and are somewhat similar to ones in which the intervention will be used. When access to real settings is difficult, researchers sometimes test prototypes in analogous situations, such as initially testing a training programme for low-income peer counsellors by using actors to play the role of actual clients. The observational system that was devised is instrumental here. This can be called programme assessment theory evaluation, which must be based on valid assumptions about the causes of the problem and the rationale of the proposed programme (Cozby 2009: 206). This may involve the collaboration of researchers, service providers and prospective clients of the programme in order to determine that the intended programme will indeed address the needs of the population in the appropriate manner.

These pilot tests help to determine the effectiveness of the intervention and identify which elements of the prototype may need to be revised (Fawcett et al. 1994: 36–37). After all these amendments have been done to the complete satisfaction of the research team, the presentation of the preliminary programme should take place. The programme should now be repeatedly presented and should form part of the culture of evaluation, specifically outcome evaluation, in which researchers must be honest, and be prepared to make amendments to the programme if necessary (Cozby 2009: 206).

These continuous amendments made by participants in order to achieve an optimally effective final programme that can be evaluated by other researchers until it becomes standardised should form part of the total process of intervention research. When the programme is evaluated by various people there is not necessarily a good measure of the impact of the programme. A word of caution should be sounded to other researchers to use and implement the programme properly and consistently, and to the principal investigator to maintain tight control of the way in which interventions are implemented (De Vaus 2002: 82).

Prinsloo (2001: 18) presented the prototype enrichment programme on five occasions to 48 marriage partners. Four of the presentations of the programme were in the form of a weekend retreat, where intensive work was done from Friday evening to Sunday afternoon. The fifth presentation was in the form of a one-day retreat. Feedback from the marriage partners contained statements that they had learned a new way of thinking and had discovered new potential in themselves and their partners. Marriage partners also mentioned additional topics on which they wanted more information. These aspects were woven into the programme.

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2.4.3 Applying design criteria to the preliminary intervention concept

The design process is informed by common guidelines and values for intervention research. There is considerable agreement about standards for appropriate commu-

nity intervention in related fields, of which social welfare is one. Relevant questions include: Is the programme attracting enough of the right clients? Are all staff members or volunteers involved in the programme properly trained to assist in the planned outcomes? Is the programme offered in a location or setting that is undesirable or difficult to find? Is the intervention effective? Is it replicable by typical end users? Is it simple to use? Is it practical? Is the intervention adaptable to various contexts? Is it compatible with local customs and values? The researcher eventually needs assurance that the programme is doing what it is supposed to do, also called process evaluation (Adler & Clark 2008: 409; Cozby 2009: 207).

Although such criteria do not suggest how to optimise these standards, they do help to guide the design of interventions that are subjected to pilot testing and formal evaluation (Fawcett et al. 1994: 37). Prinsloo (2001: 18) mentions that she implemented *every* recommendation made by participants during the five occasions when the programme was presented. She thus considered the recommendations of the participants as being design criteria for the further development of the programme.

2.5 Evaluation and advanced development

This phase of the model comprises the following steps or operations:

1. Selecting an experimental design
2. Collecting and analysing data
3. Replicating the intervention under field conditions
4. Refining the intervention

2.5.1 Selecting an experimental design

Experimental designs, whether single-subject or between-group designs, help to demonstrate causal relationships between the intervention and the behaviours and related conditions targeted for change. Factors affecting design choice include the goals and magnitude of change sought by clients, the types of behaviour and the desired immediacy of changes, the stability of the setting or context and the goals of the research (Fawcett et al. 1994: 37–38).

In the study by Prinsloo (2001: 19–21), a quasi-experimental design was selected, namely a comparison group pretest and posttest design. The participants all satisfied the criteria for participation in the study, which were as follows:

- The duration of marriages had to be 15 to 24 years.
- At least one teenage child still had to be at home.
- The marital relationship had to be fairly good to good.
- Individual marriage partners had to function relatively well and no one was to be in psychotherapy or counselling.
- No psychiatric disturbance was to be present.
- Partners had to be willing to grow and to cooperate.
- If possible, this had to be a first marriage.

Measures used for testing were the Hudson Index for Marital Satisfaction and the Kansas Marital Satisfaction Scale.

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2.5.2 Collecting and analysing data

During the pilot test and the more formal evaluations of an intervention, data are collected and analysed continuously. Ongoing graphing of the behaviour and related outcomes helps to determine when initial interventions should be implemented and whether supplemental procedures are necessary.

Using two or more independent observers to collect data at the same time helps to ensure the reliability or replicability of the findings. As a general rule, levels of inter-observer agreement of 80 per cent or higher throughout the research suggest that the instrumentation is consistent over time. Such reliability assessments help readers to judge whether the measurement system will yield similar results if used by others.

In the case of Prinsloo's (2001) research, the process of collecting and analysing data – qualitative and quantitative – is described in detail in Chapter 5 of the dissertation (Prinsloo 2001: 167–260). As mentioned before, the hypothesis for the research was that the marital satisfaction of couples in early middle age would improve when they participated in a marital enrichment programme.

All qualitative and quantitative data confirmed the hypothesis. The marital satisfaction of the couples improved by approximately 11 per cent. This evaluation was done several times after the programme and the positive influence of the programme was confirmed.

2.5.3 Replicating the intervention under field conditions

A primary goal of intervention research is to develop interventions that are effective in a variety of real-life contexts with those who actually experience the problem. Replication under various field conditions helps to assess the generalisability of the effects of the intervention.

Additional testing under actual field conditions is necessary if initial evaluations are conducted with analogue participants, under simulated situations, or implemented by individuals other than the eventual users. By the time the intervention has reached this stage, instructions, manuals and other tangible forms of the prototype will have been developed, tested and revised.

2.5.4 Refining the intervention

Errors can sometimes be seen as instructive in the sense of the results of full field testing being used to resolve problems with the measurement system and intervention. This final programme evaluation question addresses efficiency assessment (Cozby 2009: 207). Adaptations to the language, content and intervention methods may produce desired behaviour changes and outcomes for the full range of intended beneficiaries. Repeated tinkering with the intervention helps to ensure that it will reliably produce intended effects (Fawcett et al. 1994: 38–39). The cost or expenses of the programme must also be weighed against its benefits and it must be determined whether the resources used to implement the programme might be put to better use (Adler & Clark 2008: 408; Babbie 2010: 365; Cozby 2009: 207). This total endeavour is about evidence-based practice that refers to practices that have been examined through research and shown to be effective in real-world settings (Grinnell & Unrau 2008: 500).

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2.6 Dissemination

Commenting on the last phase of the new model, namely dissemination, Fawcett et al. (1994: 39–43) state that once the community intervention has been field tested and evaluated, it is ready to be disseminated to community organisations and other target audiences. All researchers should be interested to communicate their work to readers who will find it of interest or potential value (Grinnell 2001: 426). Sometimes there is an implied purpose behind the stated purpose of a study, such as to show that an intervention worked so that a programme may receive more money, prestige or credibility, or to make a case for a stakeholder with a vested interest in a phenomenon (Grinnell & Unrau 2008: 432). Researchers should be aware of the presence of these implied purposes, and acknowledge them whenever possible. Several operations help to make the process of dissemination and adaptation more successful:

- Preparing the product for dissemination
- Identifying potential markets for the intervention
- Creating a demand for the intervention
- Encouraging appropriate adaptation
- Providing technical support for adopters

2.6.1 Preparing the product for dissemination

The potential outcomes of the research endeavour should be meticulously planned, whether it is in the form of articles, chapters in books or conference presentations (Maree & Van der Westhuizen 2009: 47). In preparing the intervention for dissemination, issues such as choosing a brand name, establishing a price and setting standards for the intervention's use emerge.

CHOOSING A BRAND NAME

A brand name helps to differentiate an intervention from other similar ones at the point of adoption and while in use. Adopters come to recognise brand names for community interventions; they associate the name with certain values such as effectiveness, dependability or efficiency.

ESTABLISHING A PRICE

Choosing the right price for the intervention is important when attempting to penetrate a market segment. When the goal is widespread adoption with little necessity for ongoing technical support, such as for a simple training procedure, the price might be set low to reflect the modest development and production costs and the limited discretionary budget of potential adopters. When the goal is slower dissemination to adopters who may require extensive technical support, as in the case of a comprehensive treatment programme for vulnerable populations, the price (in terms of money, staff time and organisational requirements) might be set at an appropriately higher level.

SETTING STANDARDS FOR USE

By establishing guidelines for using community interventions correctly, researchers provide the basis for maintaining the integrity of the product.

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2.6.2 Identifying potential markets for the intervention

In defining a market of potential adopters for a community intervention, researchers should ask several questions, according to Fawcett et al. (1994: 41): Which people could benefit personally from the intervention? Who (with the use of the intervention) could contribute most to solving the problem? Is the goal of dissemination broad-based adoption (i.e. saturation of the market) or more restricted use by selected adopters? Which market segments – types of health or human service organisation – would be most likely to adopt and benefit from the intervention if they were aware of it? Which media approach – public service announcement, direct mail or other strategies – would be most appropriate and feasible to inform the targeted market segment?

Fawcett et al. (1994: 41) state that it may also be helpful to identify potential "early adopters" whose use of the product may encourage others in the selected market segments to adopt the intervention. The potential influence of early adopters may be associated with their relatively greater resources, sophistication, education and willingness to try innovative practices. Such characteristics may perhaps put them in more frequent contact with their colleagues, increasing the chances that these potential adopters will see at first hand the benefits of using the innovation.

2.6.3 Creating a demand for the intervention

Disseminators must convince potential purchasers that they will really benefit from the intervention. Several strategies are used in the marketing of innovations, including modelling of the innovation, arranging sampling of the innovation and its benefits, and advertising.

■ MODELLING

Models – including experts, celebrities or others with whom the selected market segment can identify – are shown using the innovation and deriving benefits from its use. Similar modelling strategies are commonly used to "sell" socially useful ideas, practices and products. Consider, for example, the widespread use of public service advertisements featuring professional athletes on inner-city streets telling children why they should not use drugs.

■ SAMPLING

The efforts of modelling can be further enhanced by offering opportunities for potential purchasers to sample relevant products. If sampling results in positive consequences for the targeted adopter and ultimate client, the likelihood of adoption and continued use of the intervention is increased.

■ ADVERTISING

These modelling and sampling strategies can be supplemented by advertising campaigns that prompt potential adopters to obtain and use the product. Advertising highlights desirable features of the intervention, such as its effectiveness relative to

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other products, low cost and decreased time and effort for users. The advertising campaign may also include other incentives to encourage adoption, such as a description of support services available with the purchase of the innovation. Ultimately, such strategies for enhancing demand will succeed if the product provides adopters with such benefits as effectiveness, low cost and shorter user time relative to other similar interventions currently on the market.

2.6.4 Encouraging appropriate adaptation

Adaptation – sometimes known as "reinvention" – of an innovation occurs when adopters modify the intervention to fit local conditions after its original development by others. Elements of interventions, such as the content and format of an educational programme, may be modified or deleted, and new elements may be added. There is, of course, a tension between permitting reinvention (adaptation) and preserving the quality of the intervention (model fidelity). Encouraging adaptation may accelerate the rate of adoption, but some changes may result in a loss of effectiveness, dependability or other valued attributes of the innovation. Disseminators are challenged to permit (and even encourage) necessary adaptation while the originator/s of the product continue to monitor its use in order to determine whether the intervention continues to meet established standards.

2.6.5 Providing technical support for adopters

Intervention researchers and programme staff, as the innovation's designers and implementers, are the primary knowledge experts concerning the intervention. Adopters may require support personnel from the research or programme team to assist with troubleshooting or adapting the intervention to meet their specific needs.

As private sector enterprises with a reputation for excellence have discovered, technical support may be critical in implementing the product. This is important, since those innovations that reliably produce the intended consequences are more likely to maintain long-term client satisfaction.

SUMMARY

This chapter initially briefly describes the pioneering work of Edwin Thomas and Jack Rothman, who introduced research and development to the social sciences and human service professions – development meaning here the development of technology that supports a human service profession. The intervention research model is implemented in six phases: problem analysis and project planning; information gathering and synthesis; design; early development and pilot testing; evaluation and advanced development; and dissemination. The phases of the intervention research model are described in this chapter and illustrated with an example of research in South Africa utilising this model. Many facets of intervention research are of both a quantitative and qualitative nature, depending on the idiosyncratic elements of the particular research project.

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SECTION
E

Self-evaluation and group discussion

Select any one of the following assignments:

- If you are preparing yourself for any one of the helping, caring or human service professions other than social work (such as teaching, nursing, librarianship, optometry and occupational therapy), study this chapter carefully with a view to using it as a model for intervention research. Prepare a proposal for your professional body for the initiation of a project that aims to improve levels of awareness and the implementation of intervention research in your profession.
- If you are planning a career in social work, prepare a proposal for a postgraduate study that makes use of intervention research.

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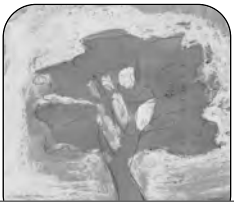

29

H STRYDOM

Participatory action research

Learning objectives

Studying this chapter should enable the reader to

- become acquainted with all the terms applicable to participatory action research
- discover the characteristics of this model
- become familiar with the process of participatory action research
- take cognisance of the data-collection techniques in participatory action research
- evaluate the advantages and disadvantages of participatory action research.

1. INTRODUCTION

In participatory action research (also called the PAR model) the focus is on the involvement and participation of all the role players in the particular research project. In PAR the truth (research) about and solutions (action) to concrete problems occur simultaneously. Research and action are thus compatible in the PAR model. Researchers and participants are, therefore, equally involved in the process and take equal responsibility for the outcome of the research endeavour. Participation, research and action are of major importance in this model (Healy 2001: 94; Rahman 1993: 91).

There is still uncertainty about the relationship between community development and the PAR model. Nevertheless, it can be stated that in this model the community work process and the research process eventually join forces and the boundaries between them become vague. Barker (2003: 5) and Maree (2007: 74) use the term *action research* to link the data-gathering process with the development of a programme designed to alleviate the identified problem. Babbie and Mouton

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(2001: 63), Druckman (2005: 314), Henning (2005: 47), Struwig and Stead (2001: 15) and Welman, Kruger and Mitchell (2005: 25, 205) see action research as a form of participatory research in which action and research complement each other and where both researcher and participant are involved in decisions regarding the entire research process with the aim of emancipation for the participants.

Some researchers say that the term *action research* is the correct one to use and to add participatory is unnecessary seeing that action research is impossible without participation. In this sense the two terms mean the same. The term PAR will, however, be used in the context of this chapter (Barker 2003: 5). PAR is widely endorsed as consistent with the commitment of health professionals to social justice – PAR promises to connect local action to large-scale, progressive social change (Healy 2001: 93). The researcher remains responsible for the research process, and the community worker should act on the recommendations of the researcher in order to improve the quality of life in the particular community. In this chapter the appropriate terminology will be defined; the characteristics, the process and the data-collection techniques of the PAR model identified; and finally the advantages and disadvantages of the model will be evaluated.

2. DEFINITION OF TERMINOLOGY

Health professionals use research to try to answer the many questions facing them in their daily practice as they attempt to respond to the rapidly changing social scene in South Africa (Van Rooyen 1998: 79). They have come to realise that they must use research to examine the need for, as well as support, the outcomes of practice (DePoy, Hartman & Haslett 1999: 560). What is needed for current practice is an active thinking process that converts knowledge into professional services – and participatory action research is exactly that.

Boersema and Maconachie (1995: 6) and Collins (1999: 2) see PAR as the collective production, transformation and control of knowledge which leads to the planning, development and achievement of jointly set objectives. The objectives are often political in nature, but can also seek organisational change, project management, community development and personal growth (Babbie & Mouton 2001: 59). Alston and Bowles (2003: 159), Boersema and Maconachie (1995: 6) and Schurink (1998: 408) delineate PAR as a research process through which people involved in the particular community are encouraged to develop critical consciousness. In PAR they are enabled to become actively involved in collective efforts to address and solve their social problems so that their knowledge and skills are increased, the resources optimally used, their quality of life and social functioning improved, emancipation achieved and the social structure in which they operate transformed.

Babbie (2007: 301) and Rubin and Babbie (2005: 439) define PAR as a research paradigm in which the researcher's function is to serve as a resource to those being studied – usually disadvantaged groups – to empower them to act effectively in their own interest. The community should therefore define their problems and remedies, and take the lead in research that will help them to achieve their aims. PAR gives the community access to information with power. This power has in the past been kept in the hands of the dominant class, gender or group. Once the members of the community see themselves as researchers, they regain power over

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knowledge (Babbie 2007: 301). Holman (1987: 680) and Pottier (1993: 1) consider PAR to be research from the underside, in other words a participative, bottom-up approach in which the investigated become the investigators.

The following questions about the scientific status of the PAR model are sometimes asked: Does research undertaken and controlled by people who are the focus of study contaminate the findings? Does the matter of normative action as part of the research paradigm violate standards of science? The main issues for scientific research in the PAR model are thus objectivity and validity. Kondrat and Juliá (1997: 44) state that PAR is social research in every sense of the term, and that participation in the total research process by research subjects, as well as issues of objectivity, power, control and exploitation in relationships, must be understood from fresh, empowering perspectives.

The following specific terms are important in this model and will be focused on: community, mobilisation, change, interactive, capacity building, empowerment, human wellbeing, self-reliance and community participation (Maree 2007: 124). This model is inherently transformative and developmental while following a cyclical process of planning, implementing and reflecting (Costello 2004: 6; Maree 2007: 124–125).

Community in this context is seen as a local community, a rather small area, a neighbourhood or a community of interests – a group or composition of people who share physical and social space, and also certain values, services, institutions and interests (Barker 2003: 83). The awareness and interaction of individual, family and community strengths and mutual needs are recognised in this community. PAR helps the community to create informal social support networks in cooperation with professional helpers to prevent or cure a problem on primary, secondary and tertiary level (*New dictionary of social work* 1995: 11; Schurink 1998: 407).

The economic wellbeing and emotional stimulation of communities are becoming more important considerations because mobilisation as such could be coercive and emotionally repressive (Rahman 1993: 18). The model focuses on the engagement and mobilisation of participants as active agents in the process of creating knowledge, reaching a collective objective and solving problems (Rahman 1993: 17; Van Rooyen 1998: 79). The modern human being in the West or Westernised communities is often characterised by a sense of isolation and purposelessness. The need for mobilisation as a development strategy stems from the failure of the individualist approach to alleviate human suffering and to bring fulfilment to people in large parts of the world.

Capacity building refers to the potential and capacity of the people in the particular community and the process of assisting them in developing skills at various levels in order to become the masters of their own development and thus acquire the capability to manage their own future. It should be a learning process characterised by flexibility, sustainability, involvement, collaboration, engagement and a total capacity-building approach (Druckman 2005: 337; Henning 2005: 24; Marais et al. 2001: 325, 404).

PAR endeavours to empower deprived and disenfranchised people with research capabilities so that they can identify and transform their situation for themselves, and it takes place in an ongoing learning process for everyone involved (DePoy et al. 1999: 560; Marlow 2005: 19; McNicoll 1999: 52; Morris 2006: 148; Nantel 2001: 1).

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Hesse-Biber and Leavy (2006: 277–278) and Thyer (2001: 446) argue that the purpose of PAR is social action and empowerment on behalf of the population that is the focus of the research. The members of the population are able to influence the resultant social action and are thereby empowered. Empowerment is the process of increasing personal, interpersonal, socio-economic and political power, thus enabling people to improve their circumstances (Barker 2003: 142; Rothman, Erlich & Tropman 1995: 205). In this cooperative manner, more successful and more sustainable outcomes can be achieved (Nantel 2001: 1). This can only happen when researchers become part of the research population and also beneficiaries of the findings. All stakeholders involved in the study are, therefore, involved in all stages of the research process (DePoy et al. 1999: 562). The researcher is not only the research expert who shares research skills, but also the co-learner who recognises and benefits from the skills and knowledge of the group members (McNicoll 1999: 52).

Bless, Higson-Smith and Kagee (2006: 64–65) maintain that what distinguishes the PAR model is the relationship between the people involved in the research process and the use of research as a tool for action and for increasing human knowledge. The PAR model empowers the people to be involved in all aspects of a project and also to begin to take control of their own lives (Van Rooyen 1998: 81). The focus is on the particular problems facing communities who attempt to use research, and the resulting action, as a tool to bring about social change, thus improving the quality of life of the communities concerned (Bless et al. 2006: 64). Together, and as equal partners, the problem and its underlying causes (whether socio-economic, political or cultural factors) are investigated. Then collective action is taken in order to bring about long-term solutions to these problems (Bless et al. 2006: 64). The researcher will play a catalytic, supportive, non-dominant, facilitative role which social researchers are ideally positioned to take (Van Rooyen 1998: 81).

Welfare, wellbeing or wellness can be regarded as the efforts of a community to help its people achieve a condition of overall health, emotional comfort and economic security (Barker 2003: 462–463). Human wellbeing should be the focal point and aim of the total research endeavour and development process, and includes wellbeing on all levels: the social, economic, technological, political, cultural and spiritual potential of people in their communities (Kondrat & Juliá 1997: 37).

The PAR model is also connected with self-reliance. Rahman (1993: 20–21) mentions the cultivation of self-reliance and the energising of the community. Self-reliance is a driving force for creative activity that requires an awareness of one's creative assets, confidence in one's ability to solve life's problems, the courage to take on challenging tasks, and the stamina to make sustained efforts to accomplish them. The ultimate goal of the PAR model is for the community to become independent and empowered to help its members to overcome the impairments in the community. Mobilisation of the community refers to the simultaneous involvement and engagement of all the members of the community in order to attain the agreed collective objective of the project (Schurink 1998: 407).

The PAR model focuses on working with and for people, rather than on people as such. The relationship of inequality (dominant researcher and subordinate research subject; active researcher and passive research subject) is changing to an equalising relationship, increased inclusion and active involvement (Beresford & Evans

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1999: 673–674). This means that both researcher and participant are dedicated to the process. The PAR model focuses on research done with the aim of furthering non-oppressive actions, diminishing exploitation and facilitating social change in a particular community (McNicoll 1999: 51; Rahman 1993: 48). Community participation can be seen as the creation of a democratic system and procedure to enable community members to become actively involved in the institutions and systems that govern their lives and to assume responsibility for their own human development (Burkey 1998: 56). In this process they will be economically uplifted, achieve social and economic rights, and seek macro-social transformation – which includes social reconstruction, capacity building and sharing in the advantages of community development – and improve their decision-making power (Kondrat & Juliá 1997: 40; Rahman 1993: 67–71).

Community participation provides a sense of belonging, a commitment to common goals, a willingness to assume responsibility for oneself and others, and a readiness to share and interact and solve those problems (Patton 2002: 221). In this manner a social network for informal social support is provided. Group process is of the utmost importance in this model. In order to explore known territories, the researcher should have a strong motivation towards action, extensive contextual knowledge of the field, and important linkages and partnerships in that community. PAR requires a major shift in attitudes and behaviours related to power. The pursuit of emancipation, liberation, partnership and participation; the fight for social justice; the adherence to all ethical principles, as well as the embracing of diversity, social awareness and equity are important in this model (Beresford & Evans 1999: 673–674; Morse 1997: 283; Walliman 2006: 151–159). In PAR, some of the people in the organisation/community being studied participate actively with the researcher throughout the research process, from the initial design to the final presentation of results and discussion of the implications for action. Ritchie and Lewis (2003: 9–10) mention that in this research model, research findings are directly fed back into the environments from which they are generated.

From all the various viewpoints on PAR it is clear that this model can be defined as an active, participating, capacity-building, involving, encouraging, mobilising and enabling research procedure in which the total community and the researcher are seen as equal partners. The aims are to ascertain the collective generation of knowledge, the planning and achievement of jointly set objectives, and for the community to be empowered to act effectively in its own interest. By being involved in this manner the community can solve its own problems, reach mutual goals and utilise the available resources optimally. This will lead to the enhancement of the community's social functioning, its self-reliance and the improvement of the quality of life of its members, as well as the overall betterment and wellbeing of the total community.

3. THE CHARACTERISTICS OF PARTICIPATORY ACTION RESEARCH

The following characteristics of the PAR model can be delineated (Burkey 1998: 53; Collins 1997: 98; Collins 1999: 19; Cousins & Earl 1995: 148; 172–174; Denzin & Lincoln 1994: 328; Denzin & Lincoln 2000: 376–377; 568; Green 1998: 362; Healy

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2001: 98; Kondrat & Juliá 1997: 32; Morse 1997: 286–305; Pottier 1993: 1; Sarantakos 2000: 8; Schurink 1998: 413–417; Sewpaul & Rollins 1999: 250):

- PAR is as committed to the development of knowledge as any research endeavour should be. PAR tries to understand the role of knowledge as an instrument of power and control.
- PAR seeks a more holistic understanding, and better ways of achieving change, than is possible through traditional research. The acknowledgment that in the globalised world knowledge is power plays a role in PAR. It is important to obtain the viewpoints of the disadvantaged themselves to create a more accurate, critical reflection of social reality, to realise human potential, and to mobilise human resources in order to solve problems.
- PAR can be considered as applied research that is directed at practical problem solving.
- The process is based on the principle of self-development, in which people must organise themselves into action.
- PAR uses all the conventional tools of social research. These tools acknowledge the value of the opinions and thoughts of all people in the particular community. Both the quantitative and qualitative paradigms may be used in PAR, depending on the goals of the project. Qualitative methods may, however, more fully reflect the voices and opinions of the community and gauge the impact and acceptability of programmes already implemented. Focus groups, in-depth interviewing and participant observation can be used as research procedures.
- PAR functions on a multidisciplinary and shared conceptual framework in which all disciplines concerned should be involved.
- Support from government, the business sector and the community is important. Support may be in the form of finances, infrastructure or human resources.
- In a successful PAR model, the community is enabled to be accountable for the progress made with the project and also for the management of its own resources.
- The PAR model is adamant about the fact that the researcher and community members should be equal partners in the research process and that the beneficiaries should participate in solutions to their own problems. Everybody involved in the research project should have shared ownership of the research enterprise (Babbie & Mouton 2001: 61). The researcher will, however, be seen as an outsider to a certain extent, despite attempts at partnership. Nevertheless, it is our firm opinion that the researcher is required to take the lead in starting the project on a scientific note, to identify and involve all stakeholders, to act as a resource person, and to see that relationships are of a high quality. This does not mean that a researcher should be in control of all aspects of the project. Members should be encouraged to research their situation systematically in cooperation with the researcher. Although PAR focuses on the involvement of its members, no project can be undertaken without the initiative of someone with time, skill and commitment, someone who is almost inevitably either a member of an edu-

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cated group or the researcher him- or herself. Research workers are almost routinely invited to initiate the research and to do the groundwork for the project in the community through consultation, evaluation, promotion of participant involvement, organising of meetings and channelling of the action to be taken. The amount of power invested in the researcher is important in PAR and a balance between over- and underinvolvement should be reached for every project specifically. Key words in this regard are, perhaps, sharing without imposing, dialogue, equality and a certain level of intimacy.

- The discussion of each team member's research viewpoint and the outcome he or she desires initially and periodically throughout the project remain part of the ongoing team-building process in PAR. By doing this, team members are attracted to the process of PAR, because they feel involved in the process and they have a desire to find useful solutions to the problem or problems.
- The challenge in PAR is to find a community-based aggregate with which to work, meaning a geographical entity that has come together with a common interest and is interested and committed to change. Although community members may all have a common interest in the problem, it cannot be assumed that they have a homogeneous view of it or of the ways in which it should be addressed. As the project proceeds, community diversity emerges and individual agendas become apparent. The challenge is to maintain a balance between the team agenda and the individual agendas.
- Power struggles may develop in three ways in the PAR model: community researchers versus external researchers; community researchers versus the community at large; and community researchers using the PAR model versus community researchers who have also entered the scene but are implementing the more traditional approaches.
- Consistency remains an issue in PAR when many people simultaneously approach a community to collect data. It is important that all members must convey the content of the project in a similar light, respecting each other's rights, and gathering information in the agreed-upon manner. If many players are collecting data, the dilemma is to reach some level of agreement on the emerging patterns and their meanings as to what actions are necessary. This process calls for negotiation and synergism, since new perspectives do not negate existing patterns, but rather stretch or augment them.
- A participatory intent continuing into participatory processes in the total PAR activity is characteristic of this model. All parties involved should continue to feel that they are making a contribution that is significant, both personally and to the group, while continuing to attend to their other individual commitments. Issues that may emerge include the unpredictability of the research course, timelines that are subject to continuous modification, and the availability of time for the work of the group. Tasks might be of a varied nature, or some members might possess particular skills. Some might be initially very involved and enthusiastic, but might become discouraged by the time commitment. Everybody must be kept interested and functionally involved in the process in order to avoid loss of interest.

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SECTION

E

- PAR is emancipatory. People are helped to recover and release themselves from the constraints of irrational, unproductive and unsatisfying social structures that limit their self-development and self-determination (Denzin & Lincoln 2000: 597). In the atmosphere of shared control and support, stakeholders must be encouraged to participate actively in the total process.
- A systems approach to PAR is important. The tendency is to examine problems from an intra- or interpersonal perspective. A systems resolution to the problem that emanates from the larger social structure is important in PAR.
- Stamina and patience are required in PAR projects to deal with the competing demands for immediate action versus meaningful participation. Demands on personal time and energy may be unpredictable and may exceed those originally anticipated. Without flexibility, the promise of participation and empowerment disappears into a cloud of expediency.
- Available resources in the community, such as values, culture, knowledge and experience, must be recognised and used to their full potential.
- PAR conveys the idea that the original causes of people being disadvantaged lie in macro-social structures. Genuine change can thus only take place through the transformation of the existing social order.
- PAR draws on conflict theory, which implies that all societies are characterised by two types of people: the haves and the have-nots. The dynamics of society are such that the ones that have want to maintain their position of privilege and power, and the ones that do not have want their power.
- PAR is intended to empower participants to take control of the political and economic forces that shape their lives. This should involve well-recognised social action strategies, such as consciousness raising and collective action. A shift should take place from the dependency model to the empowerment model, with a participatory approach in which communities can do things for themselves in order to enhance community building and eventually improve their quality of life.
- PAR implies a process of collective reflection and self-realisation in order to help the disadvantaged to regain their confidence in themselves. In this manner people are encouraged to share their experiences and to fight their way out of their problems.
- PAR implies that the existing problems of the community originated in the community and that the goal is political or social change. Members of the community should thus be capable of problem definition, information gathering and resultant action.
- PAR projects should be implemented in such a manner that a community gains a feeling of ownership of a project so that its members can then shape the necessary services as required. People should be assisted in the development of their full potential.
- The PAR model constitutes a continuous process of interaction between research, action, interpretation, reflection and evaluation by the community members

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themselves. Action and change occur during the research process, not only as a final outcome.

- This model focuses on capacity building that works towards competency, dignity and a desire for growth and participation.
- The processes of collaboration, mobilisation, empowerment, self-realisation and community solidarity are important in the PAR model.
- The ultimate goal of PAR is to improve self-esteem, self-reliance and self-determination.
- Members must also be encouraged to reflect critically on the findings and to make adjustments if necessary. Action can then be based upon the endorsed findings of the particular project.
- Ongoing surveillance, openness to dialogue and commitment to responsiveness to the competing demands for participation and action are essential to the participatory process.

The realisation of social justice through authentic involvement and pragmatic problem solving within the process is critical to the PAR model.

4. THE PROCESS OF PARTICIPATORY ACTION RESEARCH

According to Denzin and Lincoln (2000: 595), the process may not be as neat and final as in some other procedures, as the stages will overlap and mutual plans may quickly become obsolete in the light of learning from experience. The PAR process is likely to be more fluid, open and responsive than other procedures. The PAR process is described by a number of authors. The following delineation of the process is based upon the viewpoints of Bless et al. (2006: 65–68), Collins (1999: 42–43; 108–117), Kahn (1994: 2; 11–12; 95), Maree (2007: 127–131), Morse (1997: 285), McNicoll (1999: 57–58), Schurink (1998: 417) and Van Rooyen (1998: 82–84):

- *Introduction to the community.* Requests for assistance can come from social workers and health workers in a particular community. A researcher may become aware of a particular problem in a community, or the community may approach the researcher for an opinion on the problem or to assist in identifying and formulating the problem. Ideally, the request for an action-research project should come from members of a community faced with a problem. Whatever the case may be, contact with the community should be made at grass-roots level, and entry into the community must be negotiated.

  The effect of the arrival of the researcher in the community can easily be underestimated. A researcher faces the time-consuming and uncertain task of gaining the trust of the community and generating interest in the inquiry. All individuals in the community should have an equal opportunity to say what they think should be done about their situation, and what can be done to enable them to do it themselves. Some form of representation from within the community should already be gained at this early stage of the project.

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SECTION E

All ethical aspects of research should be closely monitored throughout the entire process. Aspects such as informed consent, deception, violation of privacy and debriefing of the community after the completion of the project can be regarded as essential concerns for the purposes of PAR (Hakim 2000: 143; Neuman 2003: 119–129; Yegidis & Weinbach 1996: 34).

- *Problem identification and statement.* People, especially those who are marginalised and deprived, have their own agenda, which should be respected at all costs. In order to gain a clear vision of the problem, information should be collected about the problem situation and the context within which the problem occurs. The exploration of relationships with members of the community in order to gain a sense of the problem is important, while the establishment of relationships with legitimate community leaders in order to gain entrance is of the utmost importance. A collective sense of clarity with regard to the exact nature of the problem should then be developed. Areas like unemployment, employability of community members, income, level of poverty and political control should be explored intensively. All the role players should then set about delineating the scope of the proposed undertaking.

  Researchers will have a timeframe of their own within which the project should be completed, but it is important to move at the pace of the community. A major distinction between traditional and participatory research is the continuity of the relationship. Traditional researchers leave the field after their research has been completed, but with the PAR model, ongoing involvement exists. A mutually respectful relationship may fade over time, but it should not be broken altogether. With marginalised communities, relationships should be treated with special care.

- *Goals and objectives.* Once a comfortable working relationship has been achieved it is time to consider the goals and objectives of all the groups that will be involved in the project, but also taking due cognisance of government policy. In most cases these goals will be different and the researcher has to plan carefully to accommodate everybody and all interests. A further crucial factor, at this stage, is that the researcher should determine and formulate from the various agendas what has to be evaluated, and how.

  All groups must be prepared to work together to find a solution to the problem and to achieve all the various goals set out in the contract. It must be determined exactly what information is needed in order to find a solution and how the relevant data are to be gathered. The whole team must work together in order to break the project down into manageable tasks and to allocate responsibility for each of these to the various participants.

- *Implementation of data-collection techniques.* During this phase the nature and context of a community's impediments must be determined by way of research. This phase means implementing the data-collection techniques after the entire proposed research methodology to be followed in the inquiry has been carefully considered. Besides the known formal research procedures, issue raising, community self-survey techniques and participatory assessment techniques can be mentioned as being informal research techniques (Weyers 2001: 115–130).

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The resources and needs of the community are systematically assessed and the necessary information to guide appropriate action is gathered. PAR sometimes has the accent on research and sometimes on action. The pilot study is of major importance to clarify the goals of the study and the course of action to be followed. This will enhance the researcher's awareness of the total situation. It is important to guard against bias in data collection. It is critical to be clear at the outset of the study what the goals are, and to maintain a proper balance between research and action goals. Tension between research and action goals is present in most projects, and needs to be discussed and clarified repeatedly.

- *Analysis of the data.* Following the implementation of the data-collection techniques, the analysis of the data collected is carefully done and data are categorised into certain themes so that they can be evaluated. A proper link will have to be made between the final aims and objectives, and all the possible agendas, in order to accommodate them all.
- *Negotiation.* The researcher should painstakingly ensure that the representatives of the community are truly representative of all sectors and interest groups in the community, and that all facets of the problem are represented. Negotiation should then occur between the researcher and the democratically elected representatives of the community in order to reflect accurately the will of the majority of the people. Together they investigate all aspects of the problem, expand their understanding of the dimensions of the problem and develop relevant strategies for change.

  Group dynamics and group process are important in PAR. To enable everybody to participate in an appropriate manner, not to let some dominate others, to give equal opportunities to everybody involved and not to leave the whole process to the researcher are all important aspects of this model. Group dynamics determine to a large extent the success or failure of the project. The researcher should be prepared to learn from and with the people, and also have sensitivity, adaptability, patience, empathy and a flexible attitude. The capacity to reflect critically on the process from time to time and to make appropriate adjustments is of major importance. The impetus should at all times come from the community and not from the researcher alone. The community should assume ownership of the total process.
- *Planning.* During this phase the individual interpretations of the participants should be linked to and integrated into the broader context of the problem situation. The researcher should explore and affirm the inherent strengths, skills and weaknesses within the community. The research questions for the investigation should now undergo refinement, so that everybody involved in the study knows exactly what is expected of them and what they can contribute towards the agreed-upon strategies for data collection and analysis. To reach a point of mutual understanding might require long and patient discussion. The determination of what has to be evaluated and how it will be evaluated is also a crucial factor at this stage.
- *Evaluation.* The evaluation of the data is done in a manner that will assist the researcher in writing a research report of high quality that will also be of interest to potential readers. Evaluation should always be part of the process, mean-

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SECTION E

ing the extent to which goals have been achieved, the level of skills development and empowerment of the people, and the benefits to the community through participation.

- *Report writing.* After evaluation of the data, they are written up in the research report. A PAR research report will normally consist of the following headings:
  - Background information
  - Research questions and objectives
  - Review of literature
  - Reasons for choosing PAR
  - Research methods
  - Stakeholders
  - Processing and recording of data
  - Findings, conclusions and recommendations
- *The action plan.* The development of the action plan follows on the recommendations of the research report. The research process informs some kind of action to be undertaken jointly by the action-research partners. If the power structure in the community cannot be changed by way of persuasion, power strategies or political action, the only solution to the problem remains self-help programmes for and by the community itself.
- *Evaluation of the action outcomes.* After the action plan has been implemented, the results of the action are assessed and a further period of research is initiated. Depending on these results, it may be necessary to redesign the original action undertaken. Thus action and research continue as alternate processes in the solution of the community's problems. The action part of the process keeps the research relevant, initiates further research and implements research findings, while the research part guides and evaluates the action.

5. DATA-COLLECTION TECHNIQUES

A variety of data-collection techniques can be used in the PAR model. Besides the formal research procedures such as surveys, participant observation and single systems, Collins (1999: 59–61), Schurink (1998: 416–417) and Van Rooyen (1998: 85–87) discuss several possible group formats for gathering data. These are as follows:

- *Community forums.* Community forums are also known as community meetings which make provision for large groups of up to 50 participants. The aim of these sessions is to generate ideas, to gain an impression of the community's perspective on the problem and to create awareness in the community of these issues. This can be compared to issue-raising techniques (Weyers 2001: 115–116). Brainstorming can also be done during these sessions by allowing anything related to the issue to come up for discussion without any criticism. All these ideas should be written up on a board or flipchart and discussed one by one. This will show the level of community interest and the sharing and discussion of various viewpoints on the issue. The forum might be divided into a few smaller groups, each

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with a leader, with the request to give feedback at a plenary group meeting. Community forums should be well planned and planned well in advance.

- *Nominal groups.* The nominal group is, typically, a small-group technique used for up to ten members. It is used when the needs or problems of the community have been prioritised by way of community self-survey techniques (Weyers 2001: 116–120), and specific people's views are required for further action. A nominal group might be a section of the original community forum, consisting of specific people interested in or involved with a particular section of the problem under investigation.
- *Workshops.* A workshop normally caters for a larger group than the community forum, but it is a specifically targeted interest group, for example schoolteachers in the community. It normally takes place after some of the preliminary research has been completed and a framework has been devised that now requires refining to fit the specific community's preferences. Workshops can be compared with participatory assessment techniques, such as ranking, scoring, mapping and diagramming techniques (Weyers 2001: 121–130), with the focus on a reciprocal learning process between the researcher/practitioner and community members. Participants should also be sensitised to their situation and encouraged to form their own action strategies and structures.
- *Focus groups.* A focus group is used when a small selected group of eight to 12 members is drawn together to apply their knowledge, experience and expertise to a specific problem. The group should be homogeneous and should focus on the area of concern. In-depth probing should take place, and quality solutions must be gained. Structured participation in the process is of major importance. More than one focus group might be used to enhance the quality of the results.
- *Storytelling.* In the storytelling technique, all members of the group tell their own story by giving an account of their experiences and demonstrating their views on the topic. Storytelling is associated with the narrative approach in therapy. The story could be based on a diary or be recounted from memory. It may reflect the dynamics and action that have occurred outside the group, which are normally associated with the history of the particular problem. Storytelling may also reflect experiences within the group that have perhaps been triggered by another person's story.
- *Drama.* Drama, or theatre, means that a member or members of a group act out their story instead of telling it to the community. Group members can act individually or include other members in the portrayal of their stories. One person normally plays the leading role in the story and others play parts assigned to them. Spectators in the group interpret meanings, and comment on themes and patterns according to their perceptions of the drama. Every member of the group may take a turn in acting and observing in order to gain different perspectives.

6. ADVANTAGES OF THE PAR MODEL

Several advantages of the PAR model can be delineated (Bless et al. 2006: 64–70; DePoy et al. 1999: 567; McNicoll 1999: 52; Morse 1997: 288 and Van Rooyen 1998: 80–89).

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SECTION E

- PAR readily leads to action because it motivates those directly involved. In this manner a permanent process of action can be started that leads to continuous action in a particular community.
- It can be most relevant and flexible for working with people.
- It is a hands-on procedure and is practice orientated.
- PAR can have a far greater impact than the conventional expert role of the researcher in stimulating and guiding change.
- The research process itself, not only the outcomes, will effect change or transformation that will be part of the solution.
- The goal of PAR is to make change a self-generating and self-maintaining process that continues after the research is completed.
- It can lead to a rethinking and restructuring of relations so that the impact of the process can be carried far into the future.
- Both the researcher and the community gain valuable knowledge, experience and skills. The researcher gains first-hand experience of the problems experienced by particular communities, and the effectiveness of different solutions. The members of the community are empowered to solve their own problems.
- It engages with the community in a collaborative relationship from the start on issues that the community is committed to resolving. The respondents in PAR receive something in return and are not merely used as suppliers of information.
- Apart from the obvious advantages to the community of removing a particular obstacle to its wellbeing, the members also learn more about their own problems and resources, as well as problem-solving strategies that will serve the community well for other difficulties that may arise in the future.
- It is of special value to developing countries where communities are in great need of immediate solutions to problems. The PAR model helps individuals, organisations and communities to learn, to acquire self-confidence and to obtain the resources needed to function more effectively in future. Information is also distributed throughout the community so that everybody can benefit from it; it also aids communication between partners, thus encouraging many researchers to look beyond the ivory tower in order to make their work directly beneficial to society.
- This model provides a bridge between research and practice. It is not only a knowledge-generating endeavour, but also a practice intervention. Science is not achieved by distancing oneself from the world – the greatest conceptual and methodological challenges come from engagement with the world around one. The truth about, and the solutions to, concrete problems can be pursued simultaneously. Health workers have used elements of the PAR model in their daily practice, but have often failed to recognise the relationship between research and practice.
- A multidisciplinary approach is usually needed in the PAR model, because few problems arise in such a form that they can be solved by one discipline only.
- The general openness of the PAR model is impressive. The involvement of many team members contributing to the project makes it more open than other

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approaches in which the limitations of theoretically imposed logic often constrain observation and thought. Questions are, consequently, asked in ways that lead to sharper formulation and more productive research.

- The researcher is also constantly challenged by events, ideas and arguments raised by the project participants.
- In empowering other people, researchers themselves will be motivated, encouraged and rejuvenated.

7. DISADVANTAGES OF THE PAR MODEL

A synthesis is provided below of all the following viewpoints, including the author's own, regarding the disadvantages of PAR (Bless et al. 2006: 64–70; Cousins & Earl 1995: 155; Healy 2001: 96; 102–103; McNicoll 1999: 52; Van Rooyen 1998: 87; Weyers 2001: 113; Whyte 1991: 203):

- Disadvantaged groups, such as women, the elderly and children, are particularly vulnerable to exploitation by the research endeavour.
- The fact that PAR methodology suggests that it should be value directed brings PAR into conflict with the aim of being objective in all instances. The close relationship between researcher and subjects makes it difficult for the researcher to be objective. Bias and subjectivity exist in most PAR projects and this can be problematic. All scientific principles should, however, be adhered to.
- Some difficulties might arise with the actual power sharing among research partners.
- The current popularity of this model is potentially dangerous, since it creates the pitfall of PAR becoming the only acceptable way of conducting research.
- By raising the critical awareness of oppressed people and encouraging collective responses to situations of social disadvantage, PAR could create utopian expectations regarding a just social order.
- PAR could be problematic in cross-cultural application. For instance, in some cultures respect for older people is highly valued, while in other cultures it is not such a high priority. Some cultures do not express their conflict verbally, while others find the expression of conflict desirable. Before a researcher embarks on any attempt at cross-cultural research, it is essential to take cognisance of such differences and to respect them at all times in order to ensure meaningful and credible results and to avoid possible mistrust. This can be called the challenge of earning the trust of participants so that they do not regard the researcher as an outsider but are comfortable in taking ownership of the process and allowing the researcher insight into their perceptions and experiences (Maree 2007: 135).
- Tension could arise between research and action.
- It takes longer to complete PAR than other forms of research, and it is more labour intensive than the traditional approaches to research. The researcher might also not be sure where to start his or her research endeavour.

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- In PAR projects it is not easy – indeed, it is often impossible – to control extraneous variables. It is, therefore, very difficult to know for sure that positive results achieved are entirely due to the action taken by the team.
- The narrow focus on only one community prevents the researcher from generalising research findings to other communities. Solutions thus generated in one community are not necessarily applicable in another. To apply the PAR model in rural and disadvantaged communities presents enormous challenges for researchers. For project-related learning and participation to be sustained, researchers must strive to assume some of the skills normally related to community development work. The researcher must possess communication and teaching skills, as well as the techniques of scientific inquiry. Social workers are perhaps in an ideal position to combine these skills, being trained in research methodology and community work and/or community development.
- The PAR model may pose certain practical challenges, since it demands a deep and sincere commitment to the community and to the research process. Community processes are complex and time consuming, and often difficult to access and to understand. The impediments observed would not necessarily be the same as the felt needs of the community. Moreover, first impressions could be deceptive.
- It could pose a problem to allow the community to assume ownership of the total process. Guidance from the researcher, based on ethical principles, will be of great value in situations where ethical dilemmas occur.

SUMMARY

There is a slow movement towards using the term *action research*. Most texts, however, are still using the term *participatory action research* in order to denote the two strongest qualities of this model, namely participation and action. In the PAR model the emphasis is on the participation and involvement of all the role players, which means more or less every member of the community. This model is committed to social justice and equity, especially in powerless and disenfranchised communities. Research and the resultant action become compatible in this model and call for the equal involvement and responsibility of the researcher and the community. The community work process and the research process take hands, and the boundaries between them blur. Terms such as *community*, *mobilisation*, *capacity building*, *empowerment*, *human wellbeing*, *self-reliance* and *community participation* play a major role in the PAR model.

Self-evaluation and group discussion

The members of your study group are divided over the practicability of the PAR model. You have your own views and therefore either join the group that feels strongly that PAR is the only hope for the survival of social science research, or the one that feels strongly that PAR signals the end of proper scientific social science research. Note the main arguments of both sides and make a strong appeal for your side to win.

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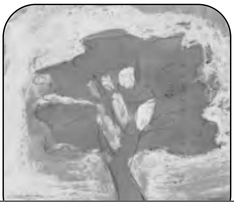

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AS DE VOS, H STRYDOM, CB FOUCHÉ & CSL DELPORT

Building a scientific base for the helping professions

1. INTRODUCTION

We have now come full circle through the research process, finally touching on a few forms of sophisticated research suitable to be undertaken only by postgraduate students or experienced researchers. One of the most familiar questions asked by many a student of research is: "So what?" At the end of this text the same question may arise in the mind of readers. To us research is much more than an exercise for obtaining a postgraduate degree. It is more than a few bricks for building a curriculum vitae. It is, rather, the most important basic tool for forging the scientific base of our professions.

2. DEFINING SCIENCE

Returning to the beginning of this text we are reminded that social science may be viewed as the study of people's behaviour, beliefs, interactions and institutions in order to discover knowledge that is objectively obtained and tested through the use of the scientific method (Monette, Sullivan & DeJong 2005: 22; Neuman 2003: 7). The scientific method can be seen as a set of rigorous procedures used in research to obtain and interpret facts (Denscombe 2008: 7). These procedures include defining the problem, stating the method for measuring it, defining the criteria to be used, observing and measuring, presenting the findings, limiting the conclusions to those aspects that are supported by the findings, and basing the recommendations on the real findings (Barker 2003: 383). Grinnell and Unrau (2008: 18) distinguish between the scientific method and the scientific attitude, where the scientific method is an ideal construct and the scientific attitude is the way people have of looking at the world.

Science can be distinguished from the other forms of understanding in that science refers to both a system for producing knowledge and the knowledge produced from the system, and includes terms such as *universalism*, *organised scepticism* and *communalism* (Marlow 2005: 5–6). The scientific base of a profession consists large-

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ly of knowledge, although executing complex tasks performed by skilful application of major principles and concepts rather than by routine operation of skills is an equally important component. The professional knowledge underpinning a true profession is thus assumed to be mainly scientific knowledge, which can be regarded as the validated and collective experiences of members of the scientific community and is the outcome of rigorous and systematic inquiry (Babbie & Mouton 2001: 6).

The knowledge base of a profession can be defined as the aggregate of accumulated information, scientific findings, values, skills and the methodology to acquire, use and evaluate existing knowledge (Barker 2003: 238). Scientific knowledge should not remain the exclusive domain of the scientific community but should find its way into public life in the form of inventions, technological developments and social policy (Monette et al. 2005: 65). Another important basic point of departure that needs to be reiterated in this introduction is that since the caring professions deal with, among others, the education, nursing and social development of people, and the social sciences involve the scientific study of people, it seems logical that the systematic professional knowledge underpinning a profession such as teaching, nursing or social work can only be termed a social science.

All professions are built on existing sciences. It is trite knowledge that students studying to become medical doctors have at least to master the basics of sciences such as anatomy and physiology. Law students study the body of rules which are binding on the members of a particular society. Students preparing to teach at high-school level study relevant sciences or languages before acquiring a degree in teaching. Nurses who wish to obtain a degree in nursing science have to study at least two social sciences such as psychology and sociology, as well as the principles of practical nursing. Social workers, likewise, study at least psychology and sociology and the principles of practical social work. In South Africa, as we have seen, training currently concentrates on the principles of social development.

What has been a concern to leaders and academics in the field of social work and other semi-professions for many decades is the fact that the professional component of training courses is rather flimsy with regard to its scientific content. The professions use the social sciences as basic introductory information, but the content of teachers' diplomas and the principles of practical social work or of practical nursing are not based mainly on scientific knowledge discovered by research. These practical guidelines are largely based on many years' practical experience, handed down from generation to generation of practitioners, informed by what is often called practice wisdom.

The question may arise immediately: What makes anyone so sure that a scientific base is necessarily a better option than practice wisdom? The answer to this question usually arises from the phenomenal advances made in professions, especially the medical specialities, where ongoing research has broken through barrier after barrier of ignorance to higher and higher levels of knowledge, usually fairly quickly transformed into competencies that inform breathtaking new interventions. In contrast, evaluative research has, at times, highlighted a lack of hard evidence that the interventions of social work, for example, are beneficial enough to justify the efforts and funds being expended.

In the 1970s social casework was plunged into a real crisis by study after study that failed to prove decisive successes. Subsequent studies asked more refined

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research questions, and from the results of these studies evidence slowly emerged suggesting that social casework is effective under certain circumstances. Kerlinger and Lee (2000) explain this phenomenon as being due to the multivariate nature of behavioural research and problems. Instead of saying: "If p, then q" ("If social casework is implemented, then the client is helped effectively"), it is often more appropriate to say, "If p_1, p_2, ... pk, then q" ("If social casework is implemented, complemented by a group work programme and play therapy for the child, then the client system is helped effectively"); or "If p_1, then q, under conditions r, s, and t" ("If social casework is implemented, the client is helped effectively, provided that the client has the motivation, capacity and opportunity to utilise the casework offered") (Ripple 1955).

These considerations, namely that research has demonstrated that major advances can be made in the medical professions while lack of research in the semi-professions has placed question marks on their effectiveness, should convince sceptics that a scientific base can only advance the quality of a profession, and presumably its effectiveness in helping clients. The value judgement – a scientific base for a profession is a good thing – is thus articulated.

3. THE BUILDING BLOCKS OF SCIENCE

In this text we noted that the building blocks of science are identified as concepts, statements (definitions, hypotheses, propositions), conceptual frameworks (typologies, models, theories) and paradigms. The relative presence or absence of these building blocks in the body of professional knowledge being taught to neophytes is an indicator of the status of its scientific base.

3.1 Concepts

The concepts being utilised in a profession are inevitably a mixed bunch consisting of concepts indigenous to that profession, and those borrowed from the underlying sciences and from related professions. Such concepts must be part and parcel of the practitioner's armour. Some examples from social work are assessment, coping skills, significant others, role play, intervention, cognitive restructuring, crisis intervention, task-centred casework and termination. Possession, understanding and use of such concepts by the members of a profession are the most basic requirements of a scientific base.

3.2 Statements

3.2.1 Definitions

Definitions and concepts are as important as vehicles of communication in practice as they are in research. Developing such definitions and/or concepts is a continuing process in social science (Babbie & Mouton 2001: 113). Definitions are used to facilitate communication to the extent that they make it possible to say something more easily and clearly than would otherwise be possible, thus other people will have the same connotation of the term in the same context. We mentioned that technical

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terms that are either selected from everyday speech or developed in a scientific discipline need to be defined carefully in order to avoid vagueness or ambiguity.

The practitioner who uses a concept when practising a profession must have a clear understanding of what exactly that concept means. The practitioner's couching of the concept in words is of less importance than his or her understanding of the concept in the context of practice. Assessment can be defined as a process taking place between therapist and client where information is gathered, analysed and synthesised to give a total picture of the client's needs and strengths (Hepworth, Rooney & Larson 2002: 187). Intervention can be seen as interceding between people, and includes processes such as treatment, advocacy, mediation, planning, organisation, and finding and developing resources in order to help the client solve the existing problem (Barker 2003: 226–227). Termination means that assessment, in terms of goals being attained, has been done, validating the decision that the relationship should be terminated, as well as planning maintenance of the change, continued growth after termination and evaluation of the results of intervention (Hepworth et al. 2002: 44).

Using relevant concepts (or constructs) consciously and knowing what those concepts mean to the extent of being able to define them in clear terms is laying the first row of bricks in the building of a scientific base for a profession.

3.2.2 Hypotheses and propositions

Babbie and Mouton (2001: 643) define *hypothesis* as an expectation about the nature of things derived from a theory and is a statement of something that should be observed in the real world if the theory is correct. A hypothesis is thus a statement that postulates a certain relationship between two or more variables. In research the objective may be to transform a hypothesis into a proposition, which may eventually become part of an explanatory theory. Thus a proposition can be seen as a truth statement about a theoretical model or theory regarding the relationship between two or more variables (Struwig & Stead 2001: 4). Hypotheses and propositions thus go hand in hand in order to advance the inquiry. According to Barker (2003: 434), a theory can be seen as a group of related hypotheses, concepts and constructs based on observations and facts that explains a particular phenomenon.

A trained practitioner in one of the helping professions knows the importance of hypotheses in daily practice. In social work, for example, practitioners form tentative hypotheses in their mind during a first interview. They may think: "This mother in front of me is abusive", knowing full well that this can be only a hypothesis at that stage, needing much more information before the hypothesis can be confirmed. Nevertheless, hypotheses play a crucial role in the ongoing professional helping process. When confirmed, they often become propositions in the report the social worker writes to the supervisor or to the court. Forming such hypotheses in practice is directed by the diagnostic reasoning mode.

However, we are in pursuit of propositions, the real building blocks of a science, in contradistinction to hypotheses. When we know or assume the direction in which the variables influence each other, we can designate one as a determinant (cause or independent variable) and the other as a result (effect or dependent variable). The formation of hypotheses by means of research is part of our dream of building a scientific base for social work, for example. The essence of such a proposition is a prac-

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tice generalisation. We illustrated practice generalisations by quoting the example described by Sheffield (1922), leading to the following proposition:

Sex workers cling with obstinacy to undesirable housing.

In this proposition, being a sex worker is the determinant, and the inclination to cling to undesirable housing is the result. However, this proposition is basically a descriptive statement and not strictly a cause-and-effect hypothesis. We can state that, in the same way as a hypothesis and proposition are mirrors of each other, so a practice generalisation and a proposition are also mirrors of each other. In this way a hypothesis, confirmed over and over in practice, becomes a practice generalisation, which becomes a proposition.

3.3 Conceptual frameworks

3.3.1 Typologies

A typology can be defined as a conceptual framework in which phenomena are classified in terms of characteristics that they have in common with other phenomena. It is the most basic conceptual framework of a science. Kirk and Reid (2002: 55–56), commenting on classification systems in a profession such as social work, point out that the usefulness of any such system depends on whether its intended purpose is advanced. For example, grouping people as male or female highlights some physiological characteristics but ignores thousands of other human traits. Whether it is useful depends on its purpose. For example, classification by gender would be useless for identifying intellectual ability, but not for identifying those most likely to contract prostate or breast cancer.

Classification in social work always has this issue of purpose as a backdrop. There are four common purposes of classifying human maladies. The first is administration, to sort the needy from the not needy, the eligible from the ineligible, the competent from the incompetent. The second common purpose is triage, to give some of the eligible and in need priority for the allocation of scarce treatment services. This involves debates about who is most needy or what the cost-benefit ratio may be for different allocations of resources. The third common purpose is knowledge development, particularly in the quest to understand etiology. Those engaged in basic research pursue the causes of maladies and need to identify the afflicted and the non-afflicted in order to scrutinise their genes, psyches, habits and social circumstances for correlates of affliction that may lead to clues about cures or prevention. Finally, the fourth common purpose of classification is to help particular clients more effectively.

Building classification schemes or typologies with these purposes in mind will enhance the growth of a scientific base and, by seeing the same regularities coming to the fore in the inquiry and testing them in other similar circumstances, it will eventually become a scientific law (Yates 2004: 13).

3.3.2 Models

A model is defined as a representation of reality, such as social workers using the systems model to represent the interaction in the family system and to discover

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where the pathology lies in the family interaction (Barker 2003: 276). The construction of practice models has had preference in a profession such as social work for many decades. From Mary Richmond (1917) to this day, practice models proliferate in the literature. Some, such as the task-centred model and behavioural models, have been extensively tested in different settings. Most others, such as the models derived from the ecological approach and competence-based models, have not been widely tested. Building a scientific base for any helping profession requires that practice models proposed in the literature or at workshops be empirically tested for validity.

3.3.3 Theories

A generally accepted definition of social theory is a set of interrelated and abstract concepts, constructs, ideas, definitions, statements, principles and propositions that present a systematic view of phenomena by specifying logical relationships among variables, with the purpose of explaining, predicting and verifying the particular phenomena by established data in the social world (Babbie 2007: 43; Marlow 2005: 6; Monette et al. 2005: 27; Neuman 2003: 7; DePoy & Gilson 2008: 236; Unrau, Gabor & Grinnell 2007: 11; Welman, Kruger & Mitchell 2005: 12). However, theories that would meet these criteria are extremely scarce, even in the more sophisticated social sciences such as sociology, educational psychology or social psychology. What has been overlooked by many social scientists is the fact that theory in the social sciences comes in three packages or levels – grand theory, theories of the middle range, and low-level or ad hoc theories – built to explain a given set of data. If the three levels are kept in mind, some progress may be traced, even in the social sciences underpinning the helping professions.

Grand theories, as originally introduced in the literature and originally also widely accepted in sociology, are, for example, the functional theory of Parsons (1951), phenomenological sociology (e.g. Schütz 1967) and many others. Merton (1957), himself a functionalist, rejected Parsons' approach to theory building. Instead of constructing an elaborate, logical system of abstract concepts, he recommends focusing on the development of what he calls "theories of the middle range". He maintains that attempts to develop grand theoretical systems in sociology are premature. Examples of theories of the middle range are Berger and Luckmann's (1967) well-known *The social construction of reality*, a study in the sociology of knowledge, Homans' seminal study *The human group* (1950) and many others.

Festinger's (1957) theory of cognitive dissonance is a prime example of a low-level or ad hoc theory. The existence of comparable theories may be traced in the literature of the so-called semi-professions. From the grand theories of Freud burgeoned the psychosocial practice systems of, for example, Florence Hollis (1964) and others. The ecological approach was the matrix of Germain and Gitterman's *The life model of social work practice* (1980). Reid and Epstein's *Task-centered casework* (1972) is a good example of a practice model based on what could be seen as a theory of the middle range dealing with "time-limited treatment for problems of living" (Reid & Epstein 1972: 1). The field of crisis intervention may illustrate how a low-level or ad hoc theory (crisis theory) may inform specialised practice models.

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Both theories and paradigms can influence the manner in which an investigation is proceeding, and the distinction between the two terms becomes rather fuzzy because some people become so entrenched in one particular theory that they tend to interpret a wide range of phenomenon only in terms of that one. Although sometimes the terms *theory* and *paradigm* are used interchangeably there are differences between them. A paradigm is a general framework for looking at life, while a theory is a set of interrelated statements intending to explain some aspect of social life and how people conduct and find meaning in their daily lives (Rubin & Babbie 2005: 43).

3.3.4 Paradigms

Barker (2003: 312) defines *paradigm* as a pattern containing a set of legitimated assumptions and a design for collecting and interpreting data. A paradigm is thus a framework, viewpoint or worldview based on people's philosophies and assumptions about the social world and the nature of knowledge, and how the researcher views and interprets material about reality and guides the consequent action to be taken (Babbie 2007: 43; Creswell 2007: 19; Welman et al. 2005: 13). In the natural sciences this means views of nature. In the social sciences the research material is individuals or groups of human beings, viewed in different ways in different paradigms. In the most simple terms, the paradigm within which the Freudian intervention models are used is that of the human mind being divided into conscious and unconscious areas, with the id, ego and superego as specific constructs within these spheres. Rubin and Babbie (2005: 38–42) distinguish, for instance, three paradigms, namely positivism, interpretivism and critical social science.

The ecological paradigm is described by Germain and Gitterman (1980: 1) as a perception that human needs and problems are generated by the transactions between people and their environments, and so on. Whether a grand theory, a theory of the middle range or a low-level theory, they are embedded in a paradigm that informs that theory. A paradigm is a building block of science. Identifying and articulating our paradigms are thus part and parcel of building a scientific base for a profession.

CONCLUSION

The problem with all the concepts, statements, conceptual frameworks and paradigms quoted above as illustrations is that they hardly meet the criteria of scientific concepts, statements, conceptual frameworks and paradigms. For example, none of the theories mentioned in the professional literature of, for instance, social work, meet the criteria contained in the definition of a theory by Kerlinger and Lee (2000) mentioned above. We are forced to the conclusion that, for this elusive dream to come true, we need a group of knowledgeable researchers devoted to the goal of forging a scientific base for their professions, together with infrastructures and the necessary funds. Those supporting an endeavour such as this will also have to be convinced of its necessity and efficacy. How many decades will pass before this kind of work will receive due consideration remains anyone's guess.

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INDEX

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D

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E

F

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O

P

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Q

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R

S

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T

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Table 19.1 Evolving research perspectives

Paradigm	Ontology	Epistemology	Methodology	Methods of data collection and analysis	Report/writing style
Objectivism Positivism	The life world of subjects can be discovered in an objective manner	Interpretation arises from the observation of the researcher. With the right methods meaning can be discovered	For example classic ethnography and phenomenology	For example participant observation and interviewing	Description of day-to-day events experienced in the field, realist tales in an authorial, supreme voice to represent and interpret the other's story
Interpretivism Modernism Realism	The real world can be discovered by means of a systematic, interactive methodological approach	Knowledge arises from the understanding of symbols and meaning (symbolic interactionism)	Grounded theory	Data are gathered by means of participant observation, human documents and interviewing, and are analysed systematically	The researcher provides insights into the behaviour displayed and the meanings and interpretations that subjects give to their life worlds
Constructivism Postmodernism Impressionism	There is no real world or truth out there, only a narrative truth. Reality can thus only be known by those who experience it personally	Those who are personally experiencing it construct knowledge through a process of self-conscious action	Newer forms of ethnography: auto-ethnography, collaborative inquiry (PAR), appreciative inquiry, personal–reflexive ethnography, narrative inquiry	Interviewing, participant observation, human documents, personal narratives, lived experience, poetic representations and fictional texts	The story must be lifelike, evocative, believable and possible to enable readers to put themselves in the place of others and have empathy

Source: Adapted from Schurink (1998: 246–247)

BACK TO PAGE